

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 68
No. 9

ESTABLISHED 1882

\$4.00 Per Year
Single Copy 15 Cents

The Voice of the Machine—"Mine Is to Build."

Foreign Commerce of the United States in 1915 and
Its Relation to Shipping and to Cotton and Grain
Growers.

"The South Has Learned to Swim Through Turbulent
Cotton Seas."

\$10,000,000 Raised for the Dixie Highway from the
West to the South.

\$25,000,000 Increase in Value of Stored Oil in
Oklahoma.

Growth of Portland Cement Production and of Con-
sumption per Capita.

These and many other articles make this issue brimful of
interest to every intelligent man of every section.

BALTIMORE, SEPTEMBER 2, 1915



First Aids to the Boiler Room

CLINCHFIELD FUEL COMPANY

SPARTANBURG, SOUTH CAROLINA

FOSTER SUPERHEATERS

¶ Will give increased efficiency and economical results in the operation of any plant using steam.
¶ Can be applied to boilers of any type, old or new.

Advantages

Greater efficiency in engines and turbines
Increased duty of pumping engines
Increased capacity of steam turbines
No drips from joints or stuffing-boxes

Higher temperatures	More heat units
Greater volume	Water troubles eliminated
Decreased Friction	Saving in steam
Saving in coal	Perfect gas properties
Better vacuum	Less steam to condense
Smaller piping	Reduced load on boilers

Uses

Steam engines	Drying rooms	Industrial plants
Steam turbines	Chemical works	Asphalt reduction
Heating systems	Wood preserving	Evaporating tanks

We will be glad to send you some interesting and useful publications dealing with this whole subject

Power Specialty Company

111 Broadway, New York

Southern District Office, Brown-Marx Building
Birmingham, Ala.

The Bailey-Lebby Co. MACHINERY and SUPPLIES



AGENTS FOR

REVERE RUBBER CO.

"GIANT" Seamless and Stitched
RUBBER BELT

"RED GIANT" Sheet

PACKING

"REVERE" Spiral and Ring

PACKING

"REVERE" Four Ace Friction
Surface RUBBER BELT

"REVERE" Hydraulic PACKING

"REVERE" Special Pilot
PLANER BELT

We Carry a Complete Line of REVERE Goods

JEFFREY Elevating and
Conveying MACHINERY

DETROIT Leather BELT

COLUMBIAN Manilla ROPE

EUREKA LATH YARN

AGENTS FOR

DISSTON SAWS AND KNIVES
CHARLESTON, S. C.



0.

HELT
KING
HELT

ing

Vol.

MA
RIC
FRA

NEW
BOST

Subac
S
I

[Water

In or
news
to the
individu

A

ON

though

Shan

for the

riding

ruin an

Voice

that it

the Ma

of the

civiliza

of me,"

his own

bigger a

reconstr

Mr. I

prose, w

New Yo

Oddly

allegoric

might be

humanize

ing a ver

HEAVY

INDICA

farmi

the fact

crop to

ing from

way req

Potomac

3036 cars

made per

tions in

each of

five men

to run an

site direc

directly

tion to

part in

motive p

This h

the 649

100 mil

and rev

the regu

accompl

charge

For th

35 spec

nooga, l

perfect

MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

Vol. LXVIII. No. 9.
WEEKLY.

BALTIMORE, SEPTEMBER 2, 1915.

\$4.00 A YEAR.
SINGLE COPIES, 15 CENTS.

PUBLISHED EVERY THURSDAY BY THE
MANUFACTURERS RECORD PUBLISHING CO.

RICHARD H. EDMONDS, Pres. VICTOR H. POWER, Treas.
FRANK GOULD, Vice-Pres. I. S. FIELD, Sec'y.

RICHARD H. EDMONDS, Editor and General Manager

BRANCH OFFICES:

NEW YORK, 52 Broadway CHICAGO, 1409 Fisher Bldg.
BOSTON, 733 Old South Bldg. ST. LOUIS, 608 Century Building

Subscription \$4 a year (payable in advance) to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. To Foreign Countries (including Canada) in the Postal Union, \$6.50 a year.

[Entered at the Baltimore Postoffice as second-class matter.]

In order to avoid delays, all correspondence pertaining to news or advertising matters should be addressed directly to the MANUFACTURERS RECORD, Baltimore, Md., and not to individual editors, officers, employees or any branch office.

A REMARKABLE POEM IN PROSE.

ON other pages of this issue the Soul of the Machine voices an appeal for justice in the thoughts of men.

Shamed for the building of cannon, reproached for the forging of the sword, and abhorred for providing the monstrous armament which has brought ruin and desolation to the lands across the seas, the Voice of the Machine speaks to remind mankind that it is the Machine that is to make peace possible, the Machine that is to rebuild the shattered remnant of the universe, and, building, ever building, "as civilization once again springs from the steel heart of me," "my unyielding hands will lift man out of his own brutal selfishness to place him, better and bigger and more tolerant, upon the ramparts of his reconstructed civilization."

Mr. Larned, the author of this majestic poem in prose, who is art director for the Ethridge Company, New York, writes in reference to his work:

Oddly enough, the public fails to appreciate that this allegorical Machine will actually produce peace when it might be impossible otherwise. If we can immortalize and humanize the manufacturing industry, we shall be performing a very essential mission.

HEAVY RAILROAD TRAFFIC IN FRUIT SHIPMENTS.

INDICATIVE of the diversification of Southern farming and its importance to the railroads is the fact that the movement of the Georgia peach crop to Eastern markets during the season extending from May 27 to August 17 by the Southern Railway required 187 special trains from Atlanta to Potomac yards on fast passenger schedules, handling 3636 cars. Of this number 3574, or 98.3 per cent., made perfect schedule and were delivered to connections in time to make market on the date due. For each of these trains four engines and four crews of five men each were required, and as it was necessary to run an equal number of extra trains in the opposite direction, a very large number of employees were directly connected with the train movement, in addition to the very much larger number who did their part in making up trains and in keeping roadway, motive power and rolling stock in repair.

This heavy extraordinary traffic was moved over the 649 miles of the Atlanta-Washington line, over 100 miles of which is undergoing double-tracking and revision, without the slightest interference with the regular traffic, a result which could have been accomplished only by a splendid organization in charge of a well-equipped plant.

For the movement of peaches to Western markets 35 special trains were run from Atlanta to Chattanooga, handling 219 cars, all of which moved on perfect schedule.

FOREIGN COMMERCE OF THE UNITED STATES IN 1915 AND ITS RELATION TO SHIPPING AND TO COTTON AND GRAIN GROWERS.

SOME interesting facts can be dug out of the annual report covering the foreign commerce of the United States for the fiscal year ended with June as compared with preceding years, and one of the most interesting of these is that while there was a large increase in the importations of foreign products free of duty, there was a very large decrease of dutiable goods. Importations of dutiable goods amounted to \$825,484,072 in 1913 and to \$766,422,958 in 1914, but last year the total amount was \$640,643,065. Here was a decrease as compared with 1914 in dutiable goods of nearly \$126,000,000, due, of course, mainly to the transference to the free list of articles which formerly paid a duty, and a decrease of nearly \$185,000,000 as compared with 1913, while, on the other hand, there was an increase in goods that came in free of duty in 1915 as compared with 1913 of \$146,000,000. There was a decrease of \$124,000,000 compared with 1914.

The amount of duties collected for the three years was as follows:

1913.....	\$318,142,344
1914.....	292,128,528
1915.....	209,268,100

The decrease in duties in 1915 as compared with 1913 was \$108,900,000, easily traceable to the decrease in dutiable goods between 1913 and 1915, of \$225,000,000.

In this connection it should be borne in mind that the non-dutiable goods showed a gain of \$46,000,000 in total import value as compared with 1913.

This unfortunate situation, cutting down the revenue of the Government from foreign imports between 1913 and 1915 over \$108,000,000, is due to unwise provisions of the tariff law which put on the free list many things which should have continued on the dutiable list. Three classifications in these dutiable imports are interesting. They are as follows:

	1913.	1915.
Crude materials for use in manufacturing.....	\$125,484,971	\$69,268,257
Manufactures for further use in manufacturing.....	168,821,773	75,903,712
Manufactures ready for consumption.....	311,056,593	228,552,086
	\$605,363,337	\$373,924,055

Here is a total for these three classifications of \$373,924,055 for 1915 as compared with \$605,363,337 for 1913, showing \$231,439,282 decrease in the importations of these dutiable goods, due, of course, to a very considerable extent to the fact that many of the articles included in these classifications which in former years paid duty now come in free of duty to the disadvantage of the manufacturing and general business interests of the country. For instance, iron ore, which formerly paid a duty, now comes in free, and as such companies as the Bethlehem Steel Co. and the Pennsylvania Steel Co. are the chief users of imported ores, the putting of ore on the free list was mainly for their benefit. The Republicans blundered when they reduced the tariff on ore from 25 cents to 15 cents a ton, and the Democrats fell into the same trap when they took off the 15 cents. In doing so they conferred a benefit on these big companies without any benefit to the public.

When the free sugar tariff goes into effect \$50,000,000 more or thereabouts will be taken off the customs receipts, unless the Government is wise enough to admit its error, retrace its steps and restore the duty to sugar, as it should do on many other things. It is not always easy for politicians to admit that they have blundered. In this case, however, it is the easier for them to do so because they can make the war an excuse for changing the present tariff and saving to the country in this crucial time, when enlarged revenues are absolutely

essential, the money they have lost by unwise tariff reductions. The sugar industry, so important from every point of view to the welfare of the country, should be protected, and the law should be repealed which takes all duty off sugar next year. It is not simply that \$50,000,000 of much-needed Government revenue is at stake in this measure, but the maintenance of an industry representing over \$100,000,000 of investments, and which is of vast importance not merely to the sugar-producing regions, but to all the ramifications of all the business interests of the country.

During the war England has had to scramble for sugar, buying it wherever she could at high prices, for sugar is essential. It is conceivable that in some world-wide war it might be impossible for us to import foreign sugar. We ought to create in this country a well-rounded agricultural and industrial development that would make us absolutely independent, in any emergency, of importations from any other country on earth. Sugar is a vital factor in this.

A study of the figures of exports by nationalities of ships will be interesting:

	1913.	1914.	1915.
Total value of exports, domestic merchandise.....	\$2,428,506,358	\$2,329,684,025	\$2,716,178,465
Recapitulation.			
Carried in—			
Cars and other land vehicles.....	\$372,619,521	\$301,893,353	\$285,349,701
American steam vessels.....	174,315,892	158,238,691	272,521,583
Foreign sailing vessels—			
Austria.....	\$38,397,174	\$35,086,502	\$877,044
Belgian.....	15,600,935	12,360,607	15,227,454
British.....	1,163,786,542	1,162,393,763	1,384,039,616
Dutch.....	90,814,076	84,576,829	108,331,885
French.....	61,102,462	61,074,098	121,580,621
German.....	274,292,402	278,809,290	18,961,429
Italian.....	38,668,429	38,067,347	74,871,277
Japanese.....	27,108,981	25,657,162	36,004,988
Norwegian.....	55,627,720	62,187,364	151,147,252
All other.....	82,958,965	81,095,651	208,244,511
Total foreign steam.....	\$1,848,357,636	\$1,841,898,613	\$2,119,286,077
American sailing vessels.....	\$10,824,790	\$7,516,370	\$11,889,382
Foreign sailing vessels—			
Belgian.....	\$657	\$144,268	\$212,511
British.....	9,923,296	9,960,847	10,176,304
Dutch.....	25,232	13,119	55,091
French.....	3,457,342	2,628,191	4,937,192
German.....	3,471,857	2,009,078	955,789
Italian.....	918,450	670,255	797,231
Norwegian.....	3,335,574	3,364,677	7,269,159
All other.....	1,256,061	1,046,533	2,728,445
Total foreign sailing.....	\$22,388,469	\$19,836,968	\$27,131,722

Another interesting fact in connection with this report of our foreign trade is that which tells the story of our dependence upon foreign shipping. Steam vessels under the American flag, under the stress of war which forced into the foreign trade every American vessel that could be so engaged, carried a total of exports of \$272,521,583 and American sailing vessels carried \$11,889,382, a total for the two of \$284,410,965. Contrast this, with shamefacedness as we ought to do, with a total of \$2,119,286,077 carried in foreign steam vessels and \$27,131,722 in foreign sailing vessels, a total of \$2,146,417,799, and we ought to hang our head in national humiliation that we are thus so completely dependent upon foreign vessels for handling our exports. The same conditions prevail in imports.

Omitting the goods carried by railroad cars and

other land vehicles into Canada and Mexico and taking only the goods shipped out of this country by water, it will be seen that in 1913 and 1914 Great Britain carried over 50 per cent. of our exports, or more than four times as much as was carried in German vessels. During the past year, notwithstanding the tremendous drain on English shipping by the ships taken for war purposes, English boats carried out of this country \$222,000,000 more than in the preceding year, or about one-half of our total exports, and if we omit the goods carried by cars to Canada and Mexico, English boats carried nearly 60 per cent. of our total exports for 1915.

If we could conceive that by some great battle the English navy had been destroyed and the German navy ruled the ocean, we can get some conception of the fearful depression that would have resulted in this country through our inability to export our grain, our cotton and other products. If the ability of England's merchant marine to carry nearly 60 per cent. of our total exports had been destroyed, it would not have been possible for Germany to meet the situation, because even during the years of 1913 and 1914, before the war, German ships were only able to carry from 10 to 12 per cent. of our export business. Moreover, the United Kingdom last year took one-third of our total exports, or \$911,000,000 out of a total of \$2,760,000,000, while France took \$369,000,000 and Italy \$184,000,000, a total for the three of \$1,454,000,000. Add to this \$300,690,000 sent to Canada, and we have \$1,754,000,000, which these four countries, our best customers, took and without which almost universal bankruptcy would have been the lot of most of our cotton and grain growers and business interests.

To the fact that the English navy was able to sweep the ocean of German warships and to keep the channels of traffic open to our commerce is due the fact that we have been able to carry on our foreign trade, and thus the cotton growers of the South, the grain growers of the West and all other lines of industry have been saved from what would have been wreck and ruin and a general financial and industrial cataclysm. Notwithstanding these facts, we are urged by some politicians to fight our best customers and seek to destroy them or bulldoze or blackmail them. Suppose these politicians should succeed, what would become of our foreign trade and where would our grain and cotton growers find a market? Ruin would be their fate.

HOW LONG, O! HOW LONG.

THE New Orleans States voices the hope that the time will eventually come when "perhaps politicians will be sent to Congress who will refrain from making the South always appear in the role of a mendicant." Not as long as the South continues to send to represent it at Washington men of the type of Georgia's own Hocus Pocus Smith or Texas' "Bob" Henry.—Norfolk Virginian Pilot.

The Virginian Pilot evidently intended to say "misrepresent," for the real South is no more represented by some men in Congress from that section than the real Georgia was represented by the mob who lynched the honor of the State. Unspeakingly bad as was the mob's action, its influence for injuring the South in the eyes of the world, as well as in its own self-respect, was hardly more far-reaching than the influence of some misrepresentatives in Congress of this section. The South has had many burdens to bear, and among the greatest are some of its politicians. How long, O! how long, is this section to suffer from them!

"WORTH READING AND PONDERING."

[Hawkinsville (Ga.) Dispatch and News.]

THE MANUFACTURERS RECORD, which never fails to put in a good word for the South, recently had this to say, which is well worth reading and pondering: "If, after fifty years of peace, the South, the most richly endowed region on earth, could be bankrupted by low prices for one or even two cotton crops, it would prove to the world that its people had been improvident and thriftless and were not worthy to live in a land so favored by Heaven. So long as there are so-called political leaders who use such situations as the present to make the world believe that the South has cotton strings for its backbones and cotton bolls for its brains, so long will it be injured in the world's estimation by their work."

GROWTH OF PORTLAND CEMENT PRODUCTION AND OF CONSUMPTION PER CAPITA.

THIRTY-THREE years ago the total recorded production of Portland cement in the United States was only 42,000 barrels, which were valued at \$126,000, or at an average of \$3 a barrel. In 1913 the annual Portland cement production reached the enormous total of 92,097,131 barrels, which, at \$1.005, the average price paid per barrel during that year, amounted to \$92,557,617. According to reports issued by the United States Geological Survey, last year marked the first recorded decrease in the annual production of Portland cement. Against the 92,097,131 barrels in 1913, the production of 1914 was 88,230,170 barrels, valued at \$81,789,368. Although this makes a decrease in one year of 3,866,961 barrels, the decrease in value by reason of lower prices was \$10,768,249. The total production for all hydraulic cement was second only to 1913, which was the record year for production. With the decrease in the output of Portland cement, however, there followed the first increase in thirteen years in the production of natural cement, the output being 751,285 barrels, valued at \$351,370. The highest production of natural cement, 9,868,179 barrels, was in 1899. After that year it experienced a continued and extensive decrease annually, until it is scarcely a contributing factor in the cement market, although there was an increase of a few thousand barrels in 1914 over 1913.

Portland cement production showed a fair growth from the beginning in the seventies until 1895, when it reached nearly 1,000,000 barrels. After 1895, coincident with the burning of powdered coal in the rotary kiln, a very rapid growth was indicated, reaching an output of 48,785,390 barrels in 1907, when it was temporarily checked by the panic of that period. From 1907 another short era of rapid growth was checked in 1911 by a combination of factors, including overproduction in 1910, 76,549,951 barrels being produced in that year, and the quiet business conditions during 1911. Even under these conditions, however, each year showed a larger production than the year before. Owing to the resumption of construction work in 1912, the Portland cement output increased a little over 1911, and, encouraged by better prices and greater demand, the 1913 growth was 9,659,035 barrels. This was the largest single year's increase recorded, with the exception of 1906, which showed an increase over 1905 of 11,216,612 barrels, 1909 with an increase of 13,918,819 barrels over 1908, and 1910 with 11,558,520 barrels more than the previous year. The demand did not keep up with the production and a considerable portion of the 1913 stock was left on hand. Thus, with this left-over stock and the general dullness intensified by the war, it is a proof of the strength of the industry that the 1914 production was only 3,866,961 barrels less than that of 1913, while the average price was higher than that for any year since 1907, with the exception of 1913.

The production of Portland cement and the average price received were as follows:

Year.	Output in barrels.	Price per barrel.
1895.....	990,324	\$1.60
1896.....	1,543,023	1.57
1897.....	2,677,775	1.61
1898.....	3,692,284	1.62
1899.....	5,652,266	1.43
1900.....	8,482,020	1.09
1901.....	12,711,225	.99
1902.....	17,230,644	1.21
1903.....	22,342,973	1.24
1904.....	26,505,881	.88
1905.....	35,246,512	.94
1906.....	46,463,424	1.13
1907.....	48,785,390	1.11
1908.....	51,072,612	.85
1909.....	64,991,431	.813
1910.....	76,549,951	.891
1911.....	78,528,637	.844
1912.....	82,438,096	.813
1913.....	92,097,131	1.005
1914.....	88,230,170	.927

Ernest G. Burchard in his report on "The Cement Industry in the United States in 1914," which is published by the Department of the Interior as Part II of the Mineral Resources of the United States for

1914, states that for years many inquiries have been received by the United States Geological Survey for more detailed information regarding the consumption of Portland cement, and that with a view to covering these inquiries statistics were prepared based on reports from cement-makers as to their shipments by States. This is the first time an attempt was ever made to get at the consumption per capita by States.

The estimated per capita consumption of Portland cement in the United States and outlying possessions in 1914, by States, in barrels, was as follows:

State.	Population (estimated).	Consumption (shipments to States). Barrels.	Estimated consumption per capita. Barrels.
Alabama.....	2,269,945	517,405	0.22
Alaska.....	64,680	83,567	1.29
Arizona.....	239,053	286,380	1.20
Arkansas.....	1,686,480	400,607	.24
California.....	2,757,895	4,678,493	1.70
Colorado.....	909,537	176,035	.19
Connecticut.....	1,202,688	1,172,095	.97
Delaware.....	209,817	116,029	.55
District of Columbia.....	353,378	341,227	.97
Florida.....	848,111	460,974	.54
Georgia.....	2,776,513	511,385	.18
Hawaii.....	208,063	96,775	.47
Idaho.....	395,407	473,206	1.19
Illinois.....	5,986,781	6,760,054	1.13
Indiana.....	2,779,467	3,028,663	1.08
Iowa.....	2,221,755	3,641,953	1.64
Kansas.....	1,734,897	1,450,882	.81
Kentucky.....	2,350,731	874,538	.37
Louisiana.....	1,773,482	583,159	.33
Maine.....	762,787	347,866	.46
Maryland.....	1,341,075	1,624,180	1.21
Massachusetts.....	3,605,522	2,618,421	.73
Michigan.....	2,976,030	3,664,149	1.24
Minnesota.....	2,213,919	3,125,930	1.41
Mississippi.....	1,901,882	206,782	.11
Missouri.....	3,372,886	2,940,638	.87
Montana.....	432,614	726,245	1.68
Nebraska.....	1,245,873	1,057,970	.85
Nevada.....	98,726	56,034	.57
New Hampshire.....	438,662	214,947	.49
New Jersey.....	2,815,663	2,779,819	.99
New Mexico.....	383,551	262,410	.68
New York.....	9,899,761	11,582,337	1.17
North Carolina.....	2,339,452	629,643	.27
North Dakota.....	686,968	175,844	.25
Ohio.....	5,026,898	6,735,027	1.34
Oklahoma.....	2,026,534	508,233	.25
Oregon.....	783,239	733,316	.94
Panama Canal Zone.....	57,400	533,975	9.30
Pennsylvania.....	8,245,967	7,200,703	.87
Philippine Islands.....	8,650,937	392
Porto Rico.....	1,184,489	232,117	.20
Rhode Island.....	591,215	316,374	.54
South Carolina.....	1,590,015	176,693	.11
South Dakota.....	661,583	428,002	.65
Tennessee.....	2,254,754	802,711	.36
Texas.....	4,257,854	1,821,628	.43
Utah.....	414,518	442,400	1.07
Vermont.....	361,205	192,912	.53
Virginia.....	2,150,009	1,008,492	.47
Washington.....	1,407,885	1,557,263	1.11
West Virginia.....	1,332,910	1,250,557	.94
Wisconsin.....	2,446,716	3,134,920	1.28
Wyoming.....	168,736	92,693	.55
Exports, not included above.....		1,605,830
Unspecified.....		97,026
Total.....	108,946,893	86,437,956	.79

The average per capita consumption for the United States was .79 barrel. California led with 1.70 barrels per capita, Montana had 1.68, Iowa 1.64, while New York had 1.17, Massachusetts .73 and Maryland 1.21. Of the Southern States West Virginia, with .94 barrel per capita; the District of Columbia, with .97, and Maryland, with 1.21, are the highest, the rest falling far below the average percentage.

Allowing about 380 pounds of cement to the barrel, the 88,230,170 barrels produced in 1914 would be an equivalent of 14,967,018 long tons, with a value per long ton of \$5.46. If this is compared with the 1914 pig-iron production of 23,332,244 long tons, it shows that the production of Portland cement was more than 64 per cent. of the quantity of pig-iron. Between 1900 and 1914 cement production advanced in tons from 1,348,000 to 14,967,000 tons, a gain of 13,600,000 tons. During the same period pig-iron gained only 9,500,000 tons. In cement the output of 1914 was eleven times as great as in 1900; in pig-iron the output of 1914 was considerably less than twice that of 1900.

THE NATION'S SAFETY DEMANDS GUN PLANTS AND NAVAL STATIONS IN THE SOUTH.

C. E. JAMES of Chattanooga, who has been one of the foremost developers of all that section, investing for himself and associates many millions of dollars in hydro-electric and other industrial plants, writing to the MANUFACTURERS RECORD in regard to a recent editorial on "The South Should Have Gun Plants and Naval Stations," says:

I think your ideas are entirely correct. This Government ought to have large plants of that kind located at some place in the interior. I think it is a good opportunity for the South to try to help to establish something of that kind. I am going to call the attention of the Chamber of Commerce and other organizations to the suggestion.

The more this question is studied the more vitally important it is seen to be, not to the South only, but to the entire country. With a population of 100,000,000 people, stretching 3000 miles across the land, it is an amazing situation that practically the entire war material productive capacity of the nation is in a little strip of country along the Eastern seaboard scarcely 200 miles long. And in addition to this is the fact of equal importance that practically all of the strategic naval bases and the big shipbuilding yards of the country are in this same region.

In view of what has been done in the European war, it can be easily seen by even the most enthusiastic booster about our country's strength that this little strip of country on the Eastern seaboard might, under some circumstances, be captured by alien armies and navies. If that were done, the rest of the country, representing probably more than 95 per cent. of its area and a very large proportion of its population, would be as helpless as an unarmed baby against an armed burglar.

We have boasted of our ability to meet all kinds of adverse situations and to prevent the invasion of our country, but the things that have been done in Europe demonstrate beyond question that we have scarcely made even the slightest beginning for a defensive campaign, and that were any portion of this seaboard once captured the entire nation would be helpless and at the mercy of the invader. If the invader were one whose hostile spirit was equal to that which ravished and destroyed Belgium, our condition would be equally as desperate as is Belgium's.

The MANUFACTURERS RECORD is not an alarmist. For many years it believed that this country was safe from the possibility of any serious attack by any other country, but in the light of the European war no intelligent man can study our situation without recognizing our helpless condition and still more clearly recognizing the need of preparedness. This preparedness must take into account the building of war-material plants in the South and in the West also, and the establishment on the South Atlantic and Gulf coasts of naval bases commensurate with our thousands of miles of sea front and our weakness in naval stations at present.

If the people of the South and West want to do something worthy of the situation, here is their opportunity. In such constructive work they could safeguard the nation's welfare, and that is the first consideration, and in so doing advance their own prosperity. Great plants should be built in the South and the West by the National Government, but the industrial leaders and capitalists of the country, who recognize their responsibility as patriotic citizens as well as their responsibility to the business interests of the country, should actively and vigorously co-operate for the building of many private munition-making plants. Mr. James, whose letter we have quoted, is himself a man of vision and of constructive ability broad enough to take the lead in bringing about the building of such a plant in the central South, and there is room enough in that section for more than one. Who will be the first to organize a strong company to build a plant in the South adequate to the needs of the times?

THE PEOPLE, AND NOT KAISERISM, WILL EVENTUALLY RULE.

ON August 6, 1914, a few days after the beginning of the European war, the MANUFACTURERS RECORD said:

Humanity may be staggered by the horrors of Europe's war, but civilization will not be destroyed. Millions of men and billions of treasure may be lost in this devilish work, thrones may totter and new maps of Europe may be necessary before the end is reached, but mankind will, on the wreck of these ruins, build a better civilization—one in which the people, and not a few unscrupulous men who feel that they have been Divinely appointed, will rule.

We have not changed our views since then. On the wreck and ruin of Europe mankind will build a better civilization and the people will rule, and not a few unscrupulous men who feel that they have been Divinely appointed to rule or ruin. From the moment the war was declared the MANUFACTURERS RECORD felt that it was a war of Kaiserism against democracy—a war of the most gigantic forces to destroy democracy in order to uphold militarism and Kaiserism and all that they represent. Humanity has indeed been staggered by the horrors of the war, and millions of men and billions of treasures have been lost in this devilish work, but eventually the people will rule. Kaiserism and all that it represents in the ravishing of Belgium and the murdering on the high seas will perish from the earth. Humanity will pay the awful cost of this destruction, but on the grave of Kaiserism humanity will build a better civilization and a higher type of Christianity, and Germany itself, now blinded by the fetish worship of Kaiserism will become a freer and a better country, and its own people for generations to come will bow their heads in shame when they think of this premeditated war made by Prussian militarism and of the awful stain of Belgium and the Lusitania. Germany, like humanity, will have to pay an awful price for its lesson and carry a burden that will sorrow millions of homes for years to come.

NOT A GOOD TIME TO BUY SHIPS.

WHAT sort of conditions the United States would be up against if this Government went into the market to buy steamships is indicated by recent sales of vessels in Europe. The Manchester Guardian of recent date reports that as a result of the war the value of steamship tonnage has during the past few months continued to rise, and extraordinarily high prices have lately been paid for second-hand bottoms. Steamers are constantly being sold for far more than they cost to build. A cargo steamer which four years ago was bought for £30,000 (\$146,000) has just been sold for £68,000 (\$330,900), while another which was bought for about £50,000 (\$243,300) just before the war has now been sold for nearly £100,000 (\$486,650).

FREIGHT RATES THREE TIMES HIGHER THAN COST OF COAL.

THE scarcity of ocean tonnage and the high rates prevailing are illustrated in a report from United States Consul A. B. Cook at Patros, Greece, who, writing under date of July 28, reports the arrival of 6000 tons of Pocahontas coal. Mr. Cook states that the price of the coal at Patros was \$15.07 per ton, of which \$11.42 was for ocean freight and \$3.65 for the coal itself. In other words, the freight from Norfolk, Va., to Patros was more than three times as much as the coal at Norfolk.

This shortage in ocean tonnage is, of course, due to the fact that a very large proportion of English steamers are now being used for war purposes, while all German tonnage has been driven off the seas. As England has largely more than one-half of the ocean tonnage of the world, the changing from mercantile traffic to war business of a very large proportion of its shipping naturally makes the entire world supply of tonnage inadequate to the needs of the times. There is almost feverish activity in the

building of boats wherever they can be built in order to meet this condition, but ships cannot be created over night. Sailing vessels a half-century or more old, and long regarded as practically out of date, especially for transatlantic traffic, are being brought into use. Large schooners heretofore confined almost exclusively to our coastwise trade are now engaged in foreign business, bringing manganese ore from Brazil and handling every other line of freight between this and other countries.

The high rate of freight reported by Consul Cook on coal is somewhat in keeping with the report recently published in the MANUFACTURERS RECORD that five American schooners were bought in New York by a Norwegian and on the same day were chartered to load lumber at Southern ports for the United Kingdom, the freight rate on the one voyage out exceeding in the aggregate the total purchase price of the five boats by \$30,000.

HOUSTON INAUGURATES OCEAN STEAMSHIP SERVICE.

HOUSTON, TEX., is very properly receiving the congratulations of the country on the inauguration of service at the port of Houston. The arrival of the first regular ocean steamer with a cargo from New York marks the entry of Houston into the list of seaports of the country.

The importance of Houston's achievement is magnified through the extraordinary enterprise and determination its citizens manifested in the creation of its man-made port. It having been determined that an expenditure of \$2,500,000 would give a channel 25 feet deep and 200 feet wide at the bottom if the work was prosecuted continuously, and this being a sum which the Government could not be relied on to furnish at a single appropriation, and it being realized that if left entirely to the Government efforts the work would be prolonged during a period of ten years or so, the people of Houston made a proposition to the Government that they themselves would pay half the cost if the Government would furnish the other half, so that an immediate prosecution of the work might be undertaken.

The proposition was accepted by the Government, and the people immediately bonded themselves for \$1,250,000, the vote being almost unanimously in favor of the bond issue. The work was carried to completion inside of three years, and a permanent channel has thus been provided. Houston and Harris county have, furthermore, issued bonds to the amount of \$3,000,000 for harbor improvements.

It is generally recognized that this is to be only the initial step in the work of creating a harbor having facilities that will enable it to compete for a large share of the business which may be carried on at any harbor in the South.

CO-OPERATION THE TRUE MEANS FOR CONSERVATION.

THE tendency toward co-operation and away from cut-throat competition is illustrated in the organization of the Institute of Paving Brick Manufacturers and the purposes of the National Lumber Manufacturers' Association, references to which are to be found in the news columns of this issue. The brick manufacturers have only recently formed their organization, but the purposes of the institute are outlined as being to elevate the standard of the business, to improve the product and conserve the interests of the brick men and the public at one and the same time.

The lumber men's association is an old-established organization, but its membership is none the less earnest in the purpose to find means to conserve the public interests—to so order their own affairs that self-interest will not obscure public welfare. Uncontrolled competitive conditions have disastrously affected the lumber industry, along with other industries whose raw material is drawn from the natural resources of the country. Public intelligence is coming to see that only through co-operation can natural resources be fully and rightly utilized.

IMPORTANT CORRECTION OF WESTERN BANK'S REPORT ON CORN PRODUCTION IN THE SOUTH.

THE Continental and Commercial National Bank of Chicago, in a report just issued upon the grain crops of the country, credits the South with an increase of 125,000,000 bushels in corn production. The MANUFACTURERS RECORD, in a letter to the bank, called attention to the fact that the increase in corn production in the South is very much in excess of these figures. In reply we have a letter stating that the report was "intended to cover only the corn production in the principal cotton States rather than the entire South," and adding:

"We deeply regret this, not only because we like to have as much accuracy as possible in everything issued from this office, but also because we are unusually interested in the diversification taking place in the Southern States this year. * * * We appreciate your courtesy in pointing out the mistake, because it is only through such action on the part of our friends that we can look to improve the report from year to year."

In view of this statement, it would be well for the newspapers throughout the South and other papers which may use the figures of the Continental and Commercial National Bank to note that this increase in corn production refers only to the principal cotton-growing States. The South, as a whole, has increased its corn production this year by nearly 300,000,000 bushels over last year if the final out-turn should prove to be as good as the August indications of the United States Agricultural Department reported.

WILL BALTIMORE OR SOME OTHER CITY LEAD IN SOUTHERN CHEMICAL INDUSTRY?

WHENEVER there is any industrial development south of Baltimore and tributary to the Atlantic seaboard, it is safe to look for a reflection of it in a corresponding industrial development in Baltimore. Thus, for many years, Turks Island salt, a product of the West Indies, found a marketing place in Baltimore. In the early days of the trade Baltimore led in the importation of Peruvian guano, then this city developed the Navassa Island guano trade, and later the Orichilla guano was heavily imported from the Caribbean Sea. Not only did the distribution of tropic fruits first flourish in Baltimore, but this city was among the first on the east coast to refine West Indian molasses and crude sugar. Adolph and Theodore Ahrens and Eliakim Robb made sugar refining a great trade asset of Baltimore until modern consolidation of trade interests gave the balance of favor to New York.

It is a fortunate outcome of the original guano trade that when natural phosphates were first converted into superphosphates Baltimore was well located for receiving foreign sulphur and pyrites for the necessary sulphuric acid, and this fertilizer manufacturing has flourished in Canton and across the Patapsco ever since. In fact, it induced Amor Smith to bring the by-products of soap making from Cincinnati and other points in the West for making nitrogen fertilizers in Baltimore.

This assembling of various elements for a manufacturing enterprise at a seaboard point convenient for distributing the products was peculiarly appropriate in petroleum refining, where long transportation charges could be minimized by pipe lines. Thus, the opening of the old Bradford oil field in Northern Pennsylvania was the occasion of completing a pipe line direct between Baltimore and Bradford, and oil was refined here in 1876. Several oil refineries flourished and were finally associated with the Standard Oil Co., and Baltimore has always since that time held its place in oil refining alongside of Philadelphia (Marcus Hook) and New York (Brooklyn) and Bayonne, N. J. More than that, the associa-

tion with the Standard Oil Co. brought to the Baltimore plant all of the technologic advance made by that company at any other point. In fact, it is well known that many important improvements in oil refining, such as heat exchanges, column distillation, mechanical agitation in refining naphtha, improved flue systems in heating oil stills, were either tried out and developed at the Baltimore works or were added at once to its equipment. So the Baltimore refinery, while not the largest, has always been modern in its equipment.

The fact that the Baltimore works is the nearest of this company on the Atlantic coast to the Mexican field has justly put the old Baltimore refinery in the limelight, and the description given on another page shows the convenience with which even 35-foot-draft tankers and distributors can come up to the docks in Canton, making that point the nearest large refining point to the Mexican field.

With a flood of oil predicted from Mexico, with improved transportation facilities for oil in bulk, it is such a coincidence with the "preparedness" of the Standard at Baltimore that one is forced to speculate as to how long ahead that company had been convinced of the coming of this oil in order to have made such elaborate preparations. From the improvements, costing \$1,000,000, now being made to this refinery, it is evident that the company is looking forward to a much larger volume of business at this port.

Recently other big refineries, which have been fully described in the MANUFACTURERS RECORD, have been built here to use Mexican oil, which they are now importing largely, and Baltimore is rapidly becoming one of the great oil-refining centers of America.

Looking forward, what will be the next contribution of Baltimore to the South's industries? With its innumerable facilities for bringing together raw materials of all kinds, such as iron ore from Cuba and manganese from Brazil, as it is now doing on a large scale; cheap machine oils, phosphate rock, imported pyrites, with large additional supplies of this material in Virginia; infusorial earth from the neighborhood of Richmond; fuller's earth by cheap water shipments from Florida; similarly cheap supplies of sulphur from Louisiana and Texas; salt from the West Indies; nitrates from Chile by way of the Panama Canal, to say nothing of the possibilities of nitric acid from the air made feasible by cheap water-power in Virginia and the Carolinas; oyster shells, lime and similar material from the limestones of Cockeysville, Frederick and Hagerstown; convenient supplies of sulphuric acid from large plants already in existence; copper and copper salts already being produced, with a chrome iron-ore plant; readily rehabilitated magnesias and limestones, which are easily accessible at Martinsburg, W. Va., is Baltimore to be one of the centers to be chosen for the coming new development of Southern chemical industry? It is certain that natural advantages will result in creating a great chemical industry in the South. Will it center at Baltimore or farther South?

NORTH CAROLINA THRIFT.

THE Commissioner of Insurance for the State of North Carolina reports on building and loan associations there during 1914 that 138 associations were in operation with assets of \$12,703,000, of which \$12,293,000 is loaned. Total receipts during the year were \$8,337,000. In 1904 there were but 41 building and loan associations in North Carolina, so that in the last ten years there was an increase of more than 200 per cent. in their total number. In 1904 the loans were only \$2,427,000 and the total assets were \$2,542,000, the assets at present being over five times as great as in 1904.

Norcott Mills Co., Concord, N. C., has organized with officers as follows: C. W. Johnston, president, Charlotte, N. C.; C. B. Wagoner, vice-president; W. G. Broadfoot, secretary; F. J. Haywood, treasurer. This company was lately mentioned as incorporated with authorized capital of \$250,000. It is having plans prepared for the construction of a cotton mill.

TRADE USES FOR PALMETTO BERRIES.

Also an Illustration of How the Manufacturers Record Acts as a Clearing-House for Information.

This is a little story about Palmetto berries. It is also an instance of the interesting coincidences of frequent occurrence in such a clearing-house of information as the MANUFACTURERS RECORD.

On August 11 the Cedarite Chemical Co. of Biloxi, Miss., wrote the MANUFACTURERS RECORD that it would like to get in correspondence with parties handling Palmetto berries. Three days later a letter arrived from Harry D. Gibson, Apalachicola, Fla., requesting advice, if possible, as to the names and addresses of firms to whom he might sell Palmetto berries.

In bringing buyer and seller together an inquiry was addressed to each for information as to what purposes Palmetto berries are put, this having been the first time Palmetto berries had ever appeared in the correspondence of the MANUFACTURERS RECORD. In response to the request for information Mr. Gibson has replied at some length, and as the information will doubtless be of interest as adding to the common knowledge of what a variety of products the South possesses, Mr. Gibson's letter is herewith reproduced:

Apalachicola, Fla., August 22.

Editor Manufacturers Record:

"Saw Palmetto berries" grow on what is commonly known here as "Palmetto bushes," so named, I presume, as to the latter, in view of the fact that the bush never attains any degree of height, ranging from one to three feet. The berries are formed on a shoot coming directly out of the ground, and are in clusters similar to the grape. In this immediate section the crop does not appear yearly, as one would surmise, but about once in every four. At least, it has been four years since they have borne in this immediate section. Why this is I am not in position to state. When fully matured the color is very dark purple or black.

Their medicinal properties evidently must be great, as they are employed largely by manufacturing chemists in this country. I am also informed they are used extensively in tanning leather. Locally the greatest benefits derived from them is as food for swine, which seem to relish them above everything else, even to corn, and the effects are marvelous. They begin gathering or eating them at this stage just before fully maturing, and continue till the supply is completely exhausted, and will leave almost any other food or range in search of them.

One single bush will have as many as a half-dozen on it. At the same time they seem to bear in patches, and not on each bush, as you would think.

I have never known the plant to be cultivated, but when transplanted and cultivated in the yard it seems to respond very readily to such treatment and makes a beautiful palm, which, like all palms, is an "evergreen."

Evidently there are several species of this plant or palm, as indicated in a letter received from the parties you referred to in your letter, and no doubt the berries of some are inferior to others for the purposes employed, as the parties named stated that the berries grown in their locality are of an inferior quality for the uses they make of them, but did not say what those uses are.

This letter is based on personal observation and inquiry, and while technically it may not conform with one to be had from the Department of Plant Industry, at the same time it will throw sufficient light on the subject that you may be able to deal with future inquiries as you would like.

HARRY B. GIBSON.

To Promote the Trucking Industry in Florida.

Owners of farms in De Soto county, Florida, are interested in furthering the truck-growing possibilities of that section. A meeting was held under the auspices of the Chamber of Commerce at Arcadia recently. It was largely attended, and much interest was shown in diversification, increased acreage, transportation and marketing facilities. Owing to the fact that vegetables, strawberries, etc., can be marketed from that section much earlier than from places to the north of it, the expectation is that with co-operation and united effort a very great and valuable development in truck farming will result.

"The South Has Learned to Swim Through Turbulent Cotton Seas"

ATLANTA'S BROAD PLANS FOR COTTON HANDLING

[Special Correspondence Manufacturers Record.]

Atlanta, Ga., August 27.

Atlanta feels secure over the cotton situation—and this, in a measure, typifies the feeling through the whole South, as Atlanta, New Orleans, Richmond, Dallas and a few other larger Southern cities hold the keys to the situation—as compared to last year.

The leading bankers here are very optimistic, despite the Allies' contraband order, despite the fact that there are said to be more than 5,000,000 bales of last year's crop still on hand, and despite the fact that the European war is still waging, with the prospect of continuing through the winter, which had so much to do with plunging the South last fall into that disastrous, and to the prestige of this section unwarranted, "buy-a-bale" movement.

One banker compared the events of the last 16 months as they affected cotton to the man who could not swim, but was thrown overboard into waters he was not at all familiar with. Naturally, he grabbed at every straw or piece of driftwood or anything that he could get his hands on that would serve as a buoy until substantial help came. He happened to get hold of a piece of mast, and the tide took him off to a desert island, where he existed for years before he was finally rescued and returned to his native shore.

And so with the South. The "buy-a-bale" movement was the first piece of mast that the panicky South grabbed after being thrown overboard into the sea of uncertainty as to the sale of its cotton, and it was carried off by the tide of fear to the desert island of self-pity. It had no particular training to guide it. Hence, when it found itself on the desert island of self-pity and the pity of the other sections of the country, it made strenuous efforts to get back to its native land of prestige. This was accomplished only through the efforts of the staunch leaders of the South; but even with their efforts it will take years to wipe out the belief that the South cannot stand on its own bottom when its principal crop is seriously affected. These same leaders—bankers, business and professional men and editors—have successfully kept the South from making this mistake again. It now knows how to swim through a turbulent cotton situation sea, and it has, through its experience last year, an authentic chart of all the danger places and the safe harbors.

The most interesting and practical move that has been made in the South so far has been the plan on the part of the Central Bank and Trust Corporation, of which Asa G. Candler, Atlanta's leading financier and manufacturer, is the president, which was outlined in last week's issue of the MANUFACTURERS RECORD. This bank has made it known that it will erect at once a fire-proof warehouse, probably of concrete construction that will cover 40 acres of ground and house 200,000 bales of cotton. Stored cotton receipts from this warehouse—there will be a compress in connection with it—will constitute paper on which money will be loaned to the extent of 7 cents per pound, at 6 per cent. interest. It is estimated that this project will take care of one-fifth of Georgia's production.

The Central Bank, according to its annual custom, issued a general letter to its customers, dated August 20, in which it estimated that Georgia would produce this year in cotton approximately 2,030,000 bales. A careful survey of the situation was made, showing that the acreage is 18 per cent. less than last year; the stand is 13 per cent. off; the cultivation is 8 per cent. off, and the general condition is 27 per cent. off from last year. These figures were secured from the corresponding banks of the Central all over Georgia, and, from past records, it is considered a fair estimate.

"With the preparations we have made and are making," said Walter T. Candler, cashier of the Central Bank & Trust Co., "we naturally feel optimistic over the situation. There is less tension in the cotton market right now than there has been since long before the war was thought of as a possibility."

Following the Candler announcement, the Fourth National Bank issued a prospectus, outlining its plan for the general handling of cotton loans in Georgia, Alabama and Florida, which was given a good deal of

publicity and attention here and elsewhere over the three States.

In a statement to the MANUFACTURERS RECORD, Charles I. Ryan, vice-president and cashier of this institution, said: "Our plan is to make the loans on cotton, up to 75 per cent. of the market value, at the usual rate of 6 per cent. direct to the farmer, with only the recommendation of the correspondent bank attached to the warehouse receipt. We have made arrangements with the Atlantic Compress Co., which has 20 compresses and warehouses in the three States, to store the cotton at the usual fees for handling and storing and issue receipts, which, to us, guarantees the weight, grade and quality. With these concentration points located strategically throughout the territory we cover it will not work a hardship on the applicant to ship it to one point, thus taking the handling out of his hands after it leaves his local railroad station. It also cuts down the possible freight and haulage charges to a minimum.

"We feel very secure this year, as we have had a whole year to prepare to take care of our customers in an emergency like this."

The Third National Bank, through its president, Frank Hawkins, has announced that it will also lend on cotton to the amount of \$1,000,000 or more. The Third National's plan is substantially the same as that of the Fourth National, in that it will advance money to the correspondent bank to the same amount and rate of interest. Its plan gives the cotton-grower still more latitude, as it will accept as collateral receipts from any reputable warehouse recommended by the local bank. Mr. Hawkins advances the opinion that the South has nothing to fear as to the fate of its chief crop, as all the banks are planning to stand solidly behind it and see that it is taken care of to the general welfare of the country.

Robert F. Maddox, vice-president of the American National Bank, is also numbered among the optimistic. He says: "We have in the past years loaned money on cotton, and shall continue to do so. Our method is not unlike the others described in the local papers. We have money here to loan, and lending it on cotton up to three-fourths of its market value is about as good an investment as we know. So we are prepared to take care of our customers, as usual."

The Lowry National Bank, like all the other local financial institutions, stands ready to relieve the market for cotton this year, according to Henry W. Davis, the vice-president.

"We are assured of plenty of money through the Federal Reserve Bank," Mr. Davis states, "as well as through the usual channels, and therefore we feel like going ahead with all activities that hinge on the cotton market. This is not only true as regards the actual selling of the cotton, but there is plenty of cheap money to be had this year for other industries, such as the textile and similar manufacturing interests. The effect of this situation is seen in the number of textile mill additions, new mills and other improvements that have been reported in your paper within the last six months. It is bound to have its general good effect, and the sooner other and allied interests realize this fact the better business will be."

"The Atlanta banks, so far as I know," said George R. Donovan, cashier of the Atlanta National Bank, "have not found it necessary to borrow money from New York this year, which is unusual. The facilities for caring for this year's crop of cotton, even if all of it has to be held for a year, were never better. All of the larger banks are co-operating with the smaller ones, and are willing to lend money on the staple. As there is plenty of cheap money and all the financiers are willing to lend on cotton, there is nothing to keep back those who have in mind developments that have been held up awaiting the disposition of the cotton problem. The South is just as solid now, financially, as it has been in years.

"Our bank," Mr. Donovan stated further, "has been lending on cotton since it was established. We are now in position to offer our customers and correspond-

ents the same service and as much money, in proportion to our resources, as any other institution in the South."

ROY G. BOOKER.

Some Suggestive Notes of Business Activities.

The Pratt Consolidated Coal Co. wires that it is building two additional barges, to be used in transporting coal from the mines of the company to Mobile via the Warrior and Tombigbee rivers. The Pratt company has been hauling coal to Mobile for several months at a cost estimated as low as 16 cents per ton, and finding these operations very satisfactory, is planning for more extensive water operations than can be cared for by its present fleet of barges.

Further use of the Warrior River was announced by W. J. Maloney, traffic manager of the Central Iron & Coal Co. of Tuscaloosa, who has just made arrangements for hauling pig-iron and pipe products of the Holt plants to Mobile by water. They will be transferred there to steamers of the Mallory Line and shipped to New York.

Continuous advancing prices of crude oil in Oklahoma are spreading a feeling of optimism among the people and the merchants there. Especially from Tulsa reports are received to the effect that prosperity is abounding, and it is felt that the city is facing the greatest period of growth and expansion in its history.

The Hallett Manufacturing Co. of Mobile has received an order for 3,000,000 pieces of hardwood, 50 inches long and 1½ inches in diameter, to be shipped to London, England. It will require about one year to complete the full order.

The Lerio Turpentine Cup Co. of Mobile has received an order through J. P. Morgan from the British Government for 250,000 brass shells, to be delivered in 90 days.

A dispatch from Newport News, Va., says that 46 foreign steamers, most of them there for export cargoes of horses, grain and coal, were riding at anchor Monday afternoon in James River or tied up at the piers. The Chesapeake & Ohio Railway Co. is working night and day, and an average of 10 steamers, most of them laden with exports, leave there each day. The ships arrive faster than they can be loaded, bunkered, cleared and sent on their way, and railway officials and shipping agents are taxed to their wits' end to solve the problem that has been growing more and more complicated each day.

Wheat shipments from the port to the European war zone are on the increase. The spring crop of Western wheat has begun to arrive.

Foreign shipments of coal also are increasing each day, and it is expected that the totals will increase each month with the coming of winter.

Thousand of horses and mules leave here each month for use in the allied armies.

Freeport Easily Weathered the Storm.

Freeport, Tex., August 28—[Special].—Freeport came through the recent storm with insignificant damage. The levees, which completely surround the townsite, served every purpose of a seawall. The levees were built to protect the community from high water in the Brazos, and in no instance since they were built have the flood waters from the river broken over the levees. It is a matter of great gratification to those living in Freeport and to those interested in the development of this port that the levees proved to be entirely successful in the protection of Freeport from Gulf storms of such intensity as that the Gulf coast recently experienced. There was some damage to the roadbed of the Houston & Brazos Valley Railway, but railroad service was resumed four days after the storm ceased. The total loss to railway, steamship and industrial interests in Freeport will probably amount to not more than \$60,000.

The Freeport Sulphur Co. suffered insignificant damage, the principal loss being the destruction of derricks, which are being rapidly rebuilt.

The Voice of the Machine

"Mine Is to Build"

By W. LIVINGSTON LARNED

So long as Man shall be, my steel soul shall be attuned to martial song.

It is the very Law of Life that there shall be Death.

Since first this great ball of Ambitious Energy was set whirling and spinning, amidst infinite space, strong arms have beaten out their weapons of defense and plowshares have shone dull red, on anvils, with the sword.

You have shamed me with my building of cannon, but I am a greater agent for Peace than ALL the babble tongues of Men.

You have thrown my rattling rain of cartridges in my face and have deplored the hour which gave them birth, but History, with her firm and unerring hand, has marked an indelible record of the World Peace I have made possible.

For every Battle, you may count endless hours of sweet content.

In my very STRENGTH, I support the weak.

My presence, as the giant "Mother of Armament," is a promise of Peace when the last records are written.

In my metal womb the Spirit of Holy Calm is brought to seed.

Conceived in momentary horror and pain and suffering, the children of my sleepless toil turn slowly into immortelle.

In your serious moment of unbending reproach, remember that robins build their nests in aged cannon, and violets run like a purple stream along the course of old entrenchments.

The majesty of a Nation's fleet is due to me.

At dawn, across strange seas, my handiwork rides, white and glittering, in the path of the new Day.

These are pious crafts, you, who shudder at my name—they are Law and Order, set in forms of great beauty—they are Self-Protection, Deified.

They are CIVILIZATION, groomed for sudden storm—CHRISTIANITY, in ponderous and unwieldy guise—PEACE, painted upon a gray canvas and deluged with the sharp, salt wash of the Sea.

My eternal song has been heard through the slow flight of Ages.

I, it was, who MADE PEACE POSSIBLE.

Whatever the sad story across seas, its span is short indeed.

Man will sheathe his sword and rust will eat the armament.

And when the smoke shall have cleared, lifting slowly, tremulously, like the trailing hem of a shadowy shroud, broad acres must lie revealed, ready for the tilling.

Mine—the Machine—to rebuild the shattered remnant of the Universe.

Heroic indeed, my transition.

For just as Wars must be, until God makes man's soul anew, so must the patching and piecing together be done, as habitations grow and cities rise, white and gold and pale-purple in the new Dawn.

As far as eyes may see, there will be untilled acres and hillsides shorn of their fruitful verdure—there will be ruin and desolation and the cry of the hungry—there will be visions of black ashes and uncountable graves, reaching to the sun.

Here will I toil for you—building, ever building.

My many strange forms will hum and sing and strain and sweat, as Civilization once again springs from the steel heart of me.

I am Legion, indeed, as I shoulder this Titan Task.

Nor will I complain at what Destiny demands of me.

Who knows—my first labor may be the pounding out of a plowshare—my next the metal skeleton of a structure whose top-most arms will bury themselves in clouds.

The hot oil shall drip from my throbbing brow.

My giant form will bend and strain and palpitate.

My unyielding hands, flecked with steel dust and stars of powdered brass, will lift Man out of his own brutal Selfishness, to place him, better and bigger and more tolerant, upon the ramparts of his reconstructed Civilization.

The brawny Workers of many Nations will again strip to their waists and guard the white-hot metal as it pours into tangible shape.

They will sing, in the half light of the long, feverish rooms, as they direct me and bend me to their needs, and a million belts will hum and a million shafts will revolve and a million boiler fires will burn far into the Night.

Slowly, God's damp, brown earth must close over the dead, and the sad records we shall write of them will tell of their hopeless struggle against that which was fore-ordained.

Look to me—ye who love honorable Toil, for I am your Brother—look to me—ye to whose ears the songs of Labor are immutably sweet, for I make these industrious chords into a master symphony.

Look to me—ye who pray for new forms to rise from gray ruins and new cities to span the dead and decayed places of Earth, for I think for the units of brick and beam and girder and stanchion, and I personify the more glorious material works of mankind.

Look to me, ye who have helped to tear down—to destroy—to rend asunder—to kill—and pillage and maim and rape: I am an heroic healer of wounds—a surgeon of spinning hemispheres.

I shall stanch the flow of waste in the hewn arteries of the prostrate World—I shall bridge broad rivers—I shall blow gray ashes of dead cities into the far Sea and sow the seed of a better and a more substantial thing.

I shall gather up all that remains of the peasant's cot and his fields and his Hopes, and they are destined to bloom, as roses bloom and lilies of fair fields.

Judge not too harshly, then, Disciples of Peace.

In full justice, it is my due that eyes look beyond the bitter Present and that Memory be firm and unwavering in its summary of Man's magic past.

The good that I have done—the good that I will do throughout a multitude of tomorrows, shall be measured in the scales with shot and shell.

Man and Machine, side by side, until the very ends of time, shall make Peace the sweeter while making it more honorably possible.

\$25,000,000 Increase in Value of Crude Oil Stored in Oklahoma

MOST SENSATIONAL ADVANCES IN OIL PRICES KNOWN IN THE HISTORY OF OIL PRODUCTION.

[Special Correspondence Manufacturers Record.]

Oilton, Okla., August 28.

Oil men say that the recent increase in the price of crude oil, going up 35 cents in 19 days, is the most remarkable in the history of the oil business, and that the increase was brought about solely because of a greater demand for oil. It is predicted freely that oil will go to \$1 a barrel. Many oil men believe it will go to \$1.50, and one well-known oil man, President John Shell of the Minnetonka company, declares it will reach \$2.50 within two years.

The recent increase in the price of Oklahoma crude is said to be the first instance when the advance was made both bigger and earlier than in other fields. The advance in Oklahoma came ahead of Pennsylvania this time, and has continued ahead. After Oklahoma had a 20-cent increase the Pennsylvania oil went up that much also, and since that time Oklahoma has had another 15-cent rise. Heretofore, it is said, whenever the Pennsylvania or white sand oil was given a 20-cent increase the proportionate increase in Oklahoma would be anywhere from 7 to 10 cents.

It is pointed out that in 1912, when Illinois oil increased from 67 cents a barrel to \$1.08, Pennsylvania increased from \$1.35 to \$2, an increase of 65 cents, and Oklahoma went from 54 to 79 cents, an increase of 25 cents. In 1913 Illinois oil went from \$1.08 to \$1.45, an increase of 37 cents, while Pennsylvania went up from \$2 to \$2.50 and Oklahoma from 79 cents to \$1.03.

Oklahoma oil at 75 cents, the present market price, shows an increase from 40 cents a barrel from August 2 to August 21. This is said to be the greatest change ever known in the Oklahoma oil price, either up or down, in the same number of days, and that it is perhaps not possible to find in oil history so pronounced a change. It is recalled that during the first five weeks of 1913 Pennsylvania oil went from \$2 a barrel to \$2.50, an increase of 50 cents in 30 days, or from January 6 to February 5, while the recent increase in the Oklahoma price was 35 cents in 19 days. In proportionate increase it is shown that the Pennsylvania increase was 25 per cent., while this in Oklahoma is 87½ per cent. The Pennsylvania increase at that time, it is recalled, was the result of a battle royal with the Pure Oil Co., when five seven-cent rises were posted within 20 days.

To find a precedent for the rapid increase in Oklahoma it is necessary to go back to 1895, when from January to April Pennsylvania oil rose from 95 cents to \$2.60 a barrel. The price stood at that top figure for only two days, however, and gradually it receded to \$1.50 a barrel within a few months.

The price of crude oil in Oklahoma on August 19 two years ago (1913) was 98 cents, and on that day it went to \$1.03 a barrel. It remained at that figure until February 2, 1914, when it went to \$1.05, and the following have been the changes since that date, beginning with April 2, 1914, when the market price fell to \$1 a barrel; on April 10, 95 cents a barrel; April 13, 90 cents; April 15, 85 cents; April 27, 80 cents; April 30, 75 cents; September 12, 65 cents, and September 22, 55 cents.

And with 1915 the decline continued. On February 8 the price fell to 50 cents a barrel, and on February 15 to 40 cents. The increase began on August 2, when oil went to 50 cents; August 4 to 55 cents; August 11 to 60 cents; August 19 to 65 cents, and August 21 to 75 cents.

In September, 1911, in Oklahoma oil went up from 42 cents a barrel to 50 cents, and by gradual increases, 2 or 3 cents at a time, it went up to 70 cents by August 22, 1912.

During the 20 months of gusher history in this field it is estimated that there were 105,000,000 barrels of crude oil produced, principally in the Oilton district. And the greater part of that time oil has been at a low figure. Naturally the question arises as to what has become of that volume of oil. At the present time there

are 70,000,000 barrels in storage in this State. And in this connection the following from the Wall Street Journal of August 5 may help solve the problem:

"The Standard Oil Co. of Indiana is well prepared for an advance in prices of both crude oils and refined products. The company bought a large quantity of low-priced Cushing crude early this year, and is now well stocked up with gasoline manufactured at low prices. Present stocks of gasoline at its three refineries and principal storage points aggregate 1,500,000 barrels of 50 gallons each, or 75,000,000 gallons."

Also in this connection the following is of great interest, also from the Wall Street Journal of July 29:

"Interests who are in a position to closely follow the affairs of the Prairie Pipe Line Co. predict that the company will inaugurate dividends before the close of the current year. It is estimated that on the present volume of traffic the company is earning at the rate of 35 per cent. per annum on its \$27,000,000 stock."

"While extensions and improvements have been made at a cost of from \$4,000,000 to \$5,000,000, it is pointed out that the company could easily provide for these expenditures out of earnings, running at the rate of over \$8,000,000 a year, and will be in a position to start dividends in the not distant future. This company, with its big shipments of Oklahoma oil, is by far the biggest earner in the pipe line group."

During the first week in August the amount of stored oil in this field reached its highest point, or 42,582,500 barrels, an increase of 3,000,000 barrels for the 30 days just preceding. The Prairie leads with 8,750,000 barrels, and the Carter is next with 8,000,000. Both of these are well-known Standard Oil subsidiaries. The 35-cent increase in the price of crude oil has made the Carter company a neat profit on its stored oil in 19 days of \$2,600,000, and it made the Prairie \$3,062,500, so that these two prominent Standard subsidiaries cleaned up on the increase in this field alone a total of \$5,662,500. And these two companies were the chief beneficiaries.

The Quaker Oil Co. made \$1,650,000 on its stored oil in this field by the 35-cent increase; the Silurian, Texas and Producers companies made \$700,000 each; Gunsberg & Forman made \$805,000; B. B. Jones, \$1,155,000; the McMan company, \$1,181,000; C. B. Shaffer, \$420,000, and the Oklahoma company \$350,000. These are the only companies in this field having 1,000,000 barrels or more of storage.

The entire profit caused by the 35-cent increase in 19 days on the total amount of stored oil in this field, 42,582,500 barrels, amounts to \$15,003,875, while on the full amount of stored oil in all Oklahoma, 70,000,000 barrels, the profit amounts to \$24,500,000.

C. M. SARCHET.

Co-operation Among Brickmakers.

An evidence of the change that is taking place in competitive industry is offered in the organization of the Institute of Paving Brick Manufacturers. A preamble to the constitution and by-laws adopted at a meeting in Canton, O., June 29 recites that as "there are now manufactured in the United States, from certain shales and clays, brick and block especially made for use in building and constructing streets and roadways, it is desirable that such brick and block be manufactured in a manner best suited and adapted for said purpose."

The object is further stated to include meetings, discussion and the reading of papers as a means of disseminating among the members further knowledge as to the manufacture of their products.

In distinction from those gatherings where brick-makers and men of allied occupations meet for interchange of ideas, the Institute meetings are designed for the paving brickmaker, pure and simple. All active members must be actively connected with a reputable company manufacturing paving brick.

Officers elected are: F. R. Kanengeiser, president;

D. E. Humphrey, vice-president; Robert Keplinger, secretary, and Spencer M. Duty, treasurer.

The next meeting will occur at Alton, Ill., September 22. The place is selected with view to the opportunity it affords to visit the plant of the Alton Brick Co. It is the rule of the Institute to combine plant inspection with theoretical study, and its investigations at Alton will be a continuance of those pursued at the plants of the Bessemer Limestone Co. in Youngstown and the Metropolitan Paving Brick Co. in Canton.

An invitation is extended to every paving brick manufacturer to attend the Alton meeting. Full particulars may be obtained from Secretary Keplinger of the Metropolitan Paving Brick Co. at Canton, O.

First Full Steamer Cargo of Flour from Baltimore.

Probably the only full cargo of flour ever loaded from Baltimore on a steamship was recently forwarded on the British tramp steamer Barlby for Dunkirk, France, by the C. A. Gambrill Manufacturing Co., manufacturer of the celebrated "Patapsco" brand of flour. The cargo amounted to approximately 36,000 barrels, and was consigned to Raymond-Hadley-Toomey Company of London, and as it was sent direct to France, it is assumed to be for the use of the British expeditionary



LOADING 36,000 BARRELS FLOUR FOR EUROPE.

force. The C. A. Gambrill company reports enjoying a good export business, having shipped much of its product to Europe lately, but this is its first full cargo shipment. Not since the days of the famous Baltimore Clippers has flour in shipload lots been exported from Baltimore. At that time most of the sailing vessels in the coffee trade carried full cargoes of flour from Baltimore to Brazil.

The Patapsco Flouring Mills have been in continuous operation since 1774, which, so far as can be learned, makes it the oldest flour milling enterprise in America. Philadelphia has one mill of equal age, but it stood idle for some years, due to failure, while the Patapsco mills have been in continuous and successful operation since two years before the Declaration of Independence by this country.

Better Uses for Hickory and Walnut.

H. M. Shaw of Oxford, N. C., writes the MANUFACTURERS RECORD that he is preparing to manufacture golf clubs, gunstocks, tool handles and a variety of sporting articles from hardwoods. His idea is to only partly manufacture these articles, selling them in an unfinished but turned state. He remarks that there is a quantity of hickory and black walnut in his immediate section that might be converted into more valuable materials than firewood and boards.

Seeks Heading and Stave Mill Location.

Referring to his plans for manufacturing in the South, S. H. Adams of Portland, Ind., writes to the MANUFACTURERS RECORD as follows:

"I have not fully decided at what point in the South I will locate a heading and stave mill. It will depend on the advantages offered, as we have been solicited at a number of different points."

\$10,000,000 for the Dixie Highway, With Every County Doing Its Part

[Now that the last county on the Dixie Highway has voted its share of bonds and \$10,000,000 or more has been made available for this splendid road from the West to Florida, it is time for the Southeast to wake up and for the people of this section to imitate the Dixie Highway hustlers and build from Washington to Florida the suggested Lee and Jackson Highway.—Editor Manufacturers Record.]

C. E. James of Chattanooga writes the MANUFACTURERS RECORD that every county along the entire Dixie Highway line from Cincinnati and Louisville to Chattanooga has now voted the necessary bonds for the immediate construction of this route. The last counties to vote bonds were Clinton and Russell counties, Kentucky, the county-seats of which are Albany and Jamestown. The road is now assured as outlined in the accompanying drawing, and a large number of counties have already begun active work of construction. This magnificent highway plan, projected from the West through Chattanooga to Florida, for which \$10,000,000 of bonds have been voted, almost puts to shame, in the work already achieved in the raising of money, the Lincoln Highway, so rapidly has the plan been matured and the money secured. About two years ago the vision of this great scheme was first outlined by Mr. James to the editor of the MANUFACTURERS RECORD, and in our issue of May 15, 1913, in a lengthy letter from Chattanooga, the whole plan was sketched so far as relates to the road from Louisville to Chattanooga, and in that statement it was said:

"With that broad vision and tireless energy which for more than 25 years have marked his work in this community, Mr. James and his associates are planning for things even more far-reaching in their effect than this water-power, although the will really come as the result of the forces generated in the community by knowledge that the power is soon to be here. * * *

"In order to reach the 4000-acre property on Signal Mountain, Mr. James and Mr. Brady are building, under the name of the Chattanooga Traction Co., a double-track 80-pound-rail electric line from the city to the summit of the mountain and then on to the plateau. They have also constructed in places alongside of the electric line, and at other points diverging from it, a well-built boulevard for automobiles and carriages. * * *

"These things in themselves have involved the expenditure of a large amount of money, for the construction of the boulevard and railroad involves some bold and expensive engineering work, but they are only the beginning of a plan of far greater importance that looks to the extension of the boulevard and electric line 210 miles to Louisville, Ky., which will shorten the distance between Chattanooga and Louisville by more than 100 miles as compared with any existing line. Mr. James is negotiating with the landowners through which this boulevard will run, and is fully determined to carry forward to completion this undertaking, and authorizes the announcement, both as to the boulevard and the electric line, that they will be built, the latter to be equipped for handling freight of all kinds as well as passengers. * * *

"Probably no more ambitious good road or boulevard improvement has been undertaken in the South than this proposed road in connection with the electric line. The character of work done on the road from Chattanooga to Signal Mountain is indicative of what Mr. James has in mind for the entire road from Chattanooga to Louisville. This road for 210 miles would run on a splendid grade in part through some of the richest farming regions of Kentucky, and then on through higher plateau lands, where mountain views of surpassing beauty would constantly enchant the motorist. When constructed in the way he plans it would be an easy journey to make a motor ride of 210 miles, either way, in one day. It is believed that thousands of motorists, especially winter tourists headed for the South, coming from the West, would pass through Louisville and then over this great highway to Chattanooga. Within a brief time a fine highway will be completed between Chattanooga and Atlanta, and another between Chattanooga and Birmingham. Some of the motorists bound South in the fall would strike for Atlanta and Florida on the one side or out to Birmingham on the other. Mr. James

is looking forward to the time when thousands of automobiles will annually travel this road, bringing the people of the West into constant intercourse for pleasure and for business with the Central South and from there to the Gulf coast and to Florida. This connecting link between Chattanooga and Louisville is essential to the scheme, and his ambition is with the co-operation of



the landowners along the route to see it promptly built."

Last winter the whole project took final shape and committees were organized to raise the needed money along the entire line, and now a great system of highways from the West to Miami, Fla., is rapidly rounding into form. Mr. James' bold dream of two years ago is already finding a fulfillment in a road or system of roads which will be of limitless value to the South.

The Cotton Movement.

In his report for August 27 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 27 days of the present season was 250,293 bales, an increase over the same period last year of 206,524 bales. The exports were 138,218 bales, an increase of 125,593 bales. The takings were, by Northern spinners, 47,172 bales, an increase of 27,087 bales; by Southern spinners, 162,047 bales, an increase of 139,153 bales.

Iron Ore in the Philippine Islands.

The iron-ore resources of the Philippine Islands are discussed by J. F. Boomer, correspondent of the United States Department of Commerce, in a recent letter from Manila. The Bureau of Science announces, he says, that the recent survey of the Surigao iron-ore deposits has proved the presence of approximately 500,000,000 tons of iron ore, distributed over an area of 100 square kilometers (square kilometer equals 0.3861 square mile) along the eastern coast of the northern part of Surigao Province. More than 400,000,000 tons of the total quantity are so situated as to offer some possibilities for profitable mining, 275,000,000 tons are situated within a region fairly close to points on the coast, from which mining operations could be carried on, and 130,000,000 tons lie within a short radius of Dajikan Bay, a possible base of mining operations which affords natural harbor facilities and is

within a short distance of possible water-power resources. Even the most favorably situated deposits, however, are upon the tops of hills ranging in elevation from 200 to 400 meters (meter equals 3.28 feet) and divided from each other by deep canyons, so that mining operations at best will be somewhat expensive.

The ore occurs as a surface mantle varying in depth up to 20 meters, and consists of hydrous oxides of iron in the form of clay. The character of this ore is such that it retains about 12 per cent. of water, even after most thorough drying, and in the preparation of such ores for smelting it is customary to drive off this water and sinter the clay together in lumps suitable in size for blast-furnace operations by heating at a high temperature in so-called nodulizing or agglomerating furnaces.

After being prepared for smelting in this manner, the Surigao ore would contain an average of about 54 per cent. of metallic iron. This figure is obtained from the analyses of samples representative of nearly 100 drill holes put down at various places over the iron-ore deposit for testing purposes.

The results of the Bureau of Science survey indicate that the Surigao iron ores constitute a natural resource

which will be more valuable in the future than it is today. At present the demand for iron and steel is not sufficient to justify an exploitation of Philippine iron-ore deposits. There are already known in the Philippines other large deposits of iron ore richer in metallic iron than the Surigao ore and more conveniently located for exploitation.

Yet all attempts to mine these ores to date have failed. When the time comes for the manufacture of iron and steel in the Philippines or for the mining of Philippine iron ore for exportation, these richer deposits will probably receive attention before the Surigao ores do. The Surigao ores, however, are valuable natural resources. While the proportion of iron is not remarkably high, the ore is unusually free from the objectionable constituents, phosphorus and sulphur, which are so commonly met with in iron ores. The presence of this immense quantity of iron ore in Surigao Province is of great importance for the future industrial progress of the Philippine Islands.

News and Views from Our Readers

Against Specious Pleadings and Suppression of Facts.

Barboursville, Va., August 26.

Editor Manufacturers Record:

I cannot help writing to you in commendation of your splendid stand in re the great European war. You are simply wonderful in the clearness of your views, and I am amazed as proud that one like you, apparently devoted to business, should be so fine an exponent of right above dollars. That the allied governments of Europe are fighting for the cause of such civilization as we in this country know is so obvious that at times I become somewhat impatient with some of our people because of their lukewarm interest in the great conflict. In Virginia and North Carolina many more or less ignorant people have been led astray by the Washington Post, which is widely read by people living along the railway lines leading south from Washington. Its specious pleadings, its fallacies, its suppression of material facts have had the effect of muddying the waters, and a great many people who should know better have been befuddled. As, of course, you know, the Post has worked Senator Hoke Smith, the Hon. Hannis Taylor and Herman Ridder for real good things in its pro-German campaign. Many people do not know the facts concerning these three gentlemen. I take it that Hannis Taylor is an old man in his dotage. He has been told that he is an authority on international law, and, coming from a cotton State, assumed a position in the interest of the "king" (cotton). In defense of the king he has become garrulous and very irritating.

Senator Smith has apparently gone money mad. He thinks only in terms of the price of cotton. He now claims that the "contraband" order will cost the South \$200,000,000. That he suppresses material facts every intelligent man in this country knows, or can easily find out.

I am a Virginian of pure Irish extraction. Historically I should be an enemy of England. In this great crisis I think that England has been the real hero. She has sought to rescue the weak from the strong and cruel and greedy. My opinion is that this country should be at the front with England and France and Russia in their fight for human freedom. Active intervention on the side of the Allies is undoubtedly what I and many other men believe in.

Were we at war with Germany, would we let Germany have our cotton? All know the answer to be, no! Then why should England and France let Germany obtain cotton? For no reason in the world, except, as the "Senator" says, the South may otherwise lose money. In the Civil War the Manchester district of England was bankrupted because the United States would not let England have cotton.

D. J. KINSIDEY.

Is Money More Desired Than Honor?

By COL. ELIAS EDMONDS, San Antonio, Tex.

Is it not lamentable to note the utter want of patriotism in many of our own people? Money seems to be the god they worship, the getting of money, no matter how, the ultima thule of their ambition. All this hue and cry about cotton and the indignation that England was putting it on the contraband list is merely for effect and possibly to advance these loud-mouthed "statesmen" to some desired position. They would have the United States Government demand of England the revocation of her Orders in Council, or else threaten to lay an embargo on the exportation of arms and ammunition in retaliation. Are these people fools, or do they not know that all the cotton in the United States is not worth the sacrifice of the good-will of all the allied powers of the Entente? What then would become of our proud boast of a strict neutrality? To refuse to sell arms and ammunition to the allied powers would be a move so decidedly in favor of Germany that no further plea of neutrality could be set up by our Government, and the allied powers would regard it as a violation and unprovoked discrimination against them and an open and deliberate act in favor of Germany.

Besides this effect abroad, do they not see that such a course would be disastrous to our own people, for it would array the sections manufacturing war materials against the cotton-growers and split our country into factions, both opposed to the best interests of the Government and hostile to its policy, both foreign and domestic?

[The writer of this, a Confederate officer, who fought for four years under Lee and Jackson, is now 83 years of age, is a lawyer, though for some years retired from active practice. He has been all his life a close student of international questions.]

Suggests Unusual Opportunities for Land Investments.

Tunnel Springs, Ala., August 28.

Editor Manufacturers Record:

As a result of the presence of the boll-weevil and unusually low prices for cotton, there are unusual opportunities for investment in Southern lands and turning these former prosperous cotton plantations into cattle, mule and hog farms. These lands, or some of them, can be bought very cheaply, and would make splendid properties for the development of the cattle industry on a large scale. Owners appreciate this fact, but the most of them are unable to finance such a proposition, or else are afraid to undertake it.

I should like, through you, to get in touch with some one who would consider investing money in a proposition of this kind. I have no land-selling scheme to present, nor am I the agent for anyone's property. Some rare opportunities exist for making money in this field that may probably never exist again when Southern cotton planters shall have recovered from the disasters of the past two years.

WM. A. LOVETT.

"Your City's Opportunity" Lies in the Production of Its Farms in the Surrounding Territory.

By E. MERLE STEDMAN, Knoxville, Tenn.

Every farm is a factory, and in every county in the South there are thousands of these factories which need our best thought and effort to make them more productive. Corn, wheat, oats, hay—nitrogenous or clover, alfalfa, cowpeas or Soy bean—beef, mutton, poultry, fruits and garden vegetables, as well as cotton, are the builders of prosperous homes in the country, and also the builders of our great cities. The solution of the world's greatest economic problem leads to the production of every farm. No city can become richer or more prosperous than its surrounding territory. We must feed ourselves, and from these factories come our food and clothing, either by a direct or indirect way. The country could probably get along without the city, but no city has ever been or will be permanently prosperous when farmers are not prosperous. There is but one road to permanent city building, and that road leads from the city to the production of every farm in its territory.

Business is so sensitive to the production of crops that when reports show a poor wheat crop the markets of the world are affected. When the fields are fat with their golden harvest, towns and cities grow fat and factories increase their payrolls.

Here lies the opportunity for greater cities in the South. Strange as it may seem to many of us, it lies out in the country—these barren and gully-washed hills—hidden in the fertility of the soil on every farm.

Hay and corn mean more and cheaper beef, pork and mutton, which will bring the packing-house and cold-storage plants. Co-operative creamery and canning factories will locate in rich farming districts where the dairy cow and trucker's patch are found. Flour mills and other factories will be built where wheat and other grains are grown. Let us create wealth from the opportunities at home first, after which capital from other sections will come to our city on account of its activity.

Even 100 prosperous and industrious farmers, each with a good team and implements, pure-bred dairy or beef cattle, and a proper knowledge of agriculture, can do much to build up our cities. Think what effect 1000 prosperous and industrious farmers in every county of the South would have on the business activity of our Southern cities, and you, Mr. Business Man, and members of the Board of Commerce of our—your—cities, will see where the permanent prosperity of your city lies.

Service to others is the first principle of good citizenship. The business men of the South must use their best thought and effort to build up the farms in the South, which will add wealth and prosperity to our cities and rural communities.

Let us do more than we are required to do by law, which will not only be beneficial to ourselves and every citizen of our own city, but to every farmer and rural community in the South. Cast your bread upon the waters, and it shall return unto you again increased many fold.

Drying Plant Wanted to Save Fruits.

The Dixie Realty Co., Inc.,

Cambridge, Md., August 25.

Editor Manufacturers Record:

I desire to get data in regard to the cost of plant for the drying of fruits, that we may place on foot a movement to establish such a plant in this locality.

Thousands of dollars have been lost to the Eastern Shore farmer this year by having no market for his peaches. It is my desire to arrange to avoid the same trouble another year.

With this data in hand I shall take up the organization of a company to handle same. H. P. WILDER.

A Louisiana View of Sugar.

"The policy that brought about 'free sugar,' with its train of ruin and suicide, has been proved to be economically wrong, and a splendid opportunity is given those responsible for it, and its incidental treasury deficit, to retrieve their error gracefully by alleging that the world's upheaval was not foreseen when they acted, and that conditions now justify them in altering their views. That a great mistake was made is evident now to everyone. The tariff revenue from sugar is needed, absolutely, by our Government. Makeshift taxation will not supply it. The people are uncomfortable under direct imposts that they feel the weight of and are reminded of daily, whereas the duty on sugar they never knew they were paying until some demagogue called their attention to it. At 80 pounds per capita consumption, a difference of, say, one cent a pound, represented by the duty, means a tax of 80 cents a year, surely not a sum to get excited about, and on the poor man it is much less than this, because he eats less confections; the sugar used in tea and coffee is a very small part of the consumption. The main consumption is in sweetmeats, of which the well-to-do are the only real heavy buyers."

The Way It Strikes a Florida Man.

Waldo Board of Trade,

Waldo, Fla., August 25.

Editor Manufacturers Record:

The MANUFACTURERS RECORD for August 12 and 19 is the last word on the Southern cotton situation. Such politicians as Mr. Hoke Smith will do well to read them and go 'way back and sit down. I might mention a new enterprise. Alexander & Co. of Waldo, Fla., opened up August 18 with a \$10,000 stock of general merchandise, and report they are doing a good substantial business.

T. B. WILLIAMS, Secretary.

A Cordial Commendation.

The John F. Byers Machine Co., Ravenna, O.:

"Your issue of August 26 is a fine, good one. You touch the quick."

Wants Peanut Oil Factory.

Douglas Chamber of Commerce,
Douglas, Ga., August 23.

Editor Manufacturers Record:

Can you put us in touch with someone interested in locating peanut oil mills?

We are especially desirous of locating one in this section for such a commodity. We will produce probably 50,000 pounds of peanuts this year which will go onto the market. If we could locate such a refinery we could and would grow hundreds of thousands of pounds.

A free factory site, light, water and taxes at a minimum, with an equal amount of stock subscribed locally, awaits some energetic company.

R. A. SMITH, Secretary.

Finds Southern Conditions Very Satisfactory.

Sweetwater, Tex., August 23.

Editor Manufacturers Record:

I have been making a very extended trip throughout the cotton country, and have had a most intimate view of the economic conditions. The South was probably never so well prepared to market a cotton crop to advantage as it will be the coming crop. Certainly the country has raised the greatest food supply ever known in its history, and the wholesome effects of well digested plans of economizing is evident on every hand. I feel entirely optimistic.

W. W. MORRISON,
Cotton Exchange, New Orleans, La.

Frank P. Drane, Charlotte, N. C.

"The outlook in this immediate section is good. The recent rains came in good time to make the corn crop, and the crops in general are good. The decision of the Ford Company to establish one of its assembling plants in this city was most satisfying to our people, and it is thought that more than immediate benefit will be derived from their coming."

Business Proceeding as Usual.

The First National Bank of Galveston,
Galveston, Tex., August 20.

Editor Manufacturers Record:

We have had a severe storm. The seawall and grade elevation afforded us almost complete protection. The loss of life in the city is less than 10. All banks opened for business yesterday, the 19th, and business is proceeding as usual. The city is being rapidly put in order.

We are prepared to serve you, and trust you will not hesitate to call on us for any service we can render.

With thanks for the many kind expressions and inquiries as to our welfare, we remain, with best wishes,
FRED W. CATTERALL, Cashier.

Largest Cargo of Hardwood Lumber.

Mr. George Land, traffic manager of the Lamb-Fish Lumber Co. of Charleston, Miss., writes the MANUFACTURERS RECORD that the largest cargo of oak lumber ever forwarded from the United States in one single load, consisting of 2,500,000 feet, was shipped by them on the largest vessel, the Stiklestead, that was ever



S. S. STIKLESTEAD WITH RECORD LUMBER CARGO.

loaded at Gulfport, Miss. This cargo, destined to London, was loaded on the steamer shown in the accompanying cut, and in order to hasten the shipment 170 men were employed, working in shifts the full 24 hours. Much activity is reported in the sale of lumber for English ports.

How Texas City Weathered the Hurricane.

Texas City Board of Trade,

Texas City, Tex., August 22.

Editor Manufacturers Record:

Texas City did not suffer anything like the press reports of last Tuesday and Wednesday would indicate. Two hundred thousand dollars will cover all of the loss and damage in this city, the biggest part of it being at the Pierce Fordyce oil refinery.

I think it is true that the wind reached 125 miles per hour along the Texas coast, and what made the storm seem so horrible to those of us who went through it was the fact that for 12 or 15 hours the wind blew at 75 miles per hour and greater.

On the business streets of Texas City the water from Galveston Bay rose to between one and two feet, and got on the first floor of some of our business buildings. Into other buildings, such as the Texas City National Bank Building, Board of Trade Building, the first floor of which is built two feet higher than the curbs, the water did not come at all. Our damage was from wind, and not water.

Eleven soldiers lost their lives in a three-story brick building that had not been finished. The two upper stories having been built during the preceding week, the mortar was green, and the building collapsed. Up to today we cannot find that more than three civilians of Texas City were killed or drowned.

As for our ocean terminals, in which we have \$4,000,000 invested, there was between \$5000 and \$10,000 damage to the roofs of our warehouses and to the wharf aprons, but after the storm subsided on Tuesday we began work with the steamers then in port, and steamers are now coming and going. With the exception of the trash and debris that has washed up on the shore, there are but few signs of the storm left. All of the trunk line railroads are now running their trains into Texas City, handling the business of Galveston which Galveston today could be handling itself were it not for the fact that our magnificent concrete causeway was badly damaged, about one-third of it being washed out, which cuts off all communication with Galveston Island except by boat. It is my judgment that temporary repairs can be made to the causeway, and that steam railroad trains and the interurban railway can be operating to the island in a month or less.

Thirty hours after the storm we had our water-works at Texas City operating, the electric system at work, and are today starting the street-car system.

Neither myself nor any other citizen of this community can think about or talk about the prompt recovery from the storm without referring to the magnificent work of the Second Division of the United States Army, encamped at Texas City and at Galveston. Major-General J. Franklin Bell took charge of the situation, and with approximately 8000 troops accomplished in a quiet and orderly manner things that to me seemed almost impossible. His magnificent organization of a complete army, including the hospital, sanitary and medical corps, the engineer corps, the signal corps, with motor trucks and team transportation for moving and supplying 10,000 men, gave him facilities for doing things that would make all Americans proud of our army if they only knew its value in time of peace as well as war. While General Bell won a medal of honor on the battlefield, he should have recognition for his achievements at Texas City and Galveston during our hour of trial as an executive and builder.

H. B. MOORE, President.

CO-OPERATING FOR DEVELOPMENT.

An Illuminating Illustration of the Beneficial Results of Community Teamwork.

"Let Arkansas feed herself" is a slogan which has been adopted by the commercial organizations of the State and by the people generally. Notable progress in the direction of carrying out this excellent motto is reported from time to time, and organizations, particularly the Arkansas Profitable Farming Committee, with headquarters at Little Rock, are giving effective aid to the movement.

Mr. E. J. Bodman, chairman of the Arkansas Profit-

able Farming Committee, reports an interesting case that shows what concerted action will do when the railroads, business and professional men co-operate with the farmer with this object in view. Prior to 1915 Newark, Ark., had been shipping on an average of 50 cars of feedstuffs every year. C. O. Carpenter, assistant commissioner of agriculture for the St. Louis, Iron Mountain & Southern Railway Co., reports that this year no feedstuffs are being shipped into Newark. On the contrary, 23 carloads of wheat have been shipped out of Newark thus far this season, and two other carloads are now ready for shipment. Thirty carloads of alfalfa have been shipped thus far, and the total for the summer will be 50 carloads. Twenty-five carloads of canned goods are now in storage in Newark, and 25 more will be canned during the fall. From 150 to 200 carloads of corn will be shipped from Newark, in spite of the fact that the farmers in the Newark territory have more stock to feed this year than ever before. Early next year the farmers will begin to bank money from strawberries, which will be shipped in carload lots.

The Situation as Viewed by James R. Gray, Editor of the Atlanta Journal.

[New York Herald.]

"The Allies are fighting against Germany the fight of the United States," said James R. Gray, editor and owner of the Atlanta Journal, at the Waldorf last night. Mr. Gray recently took to task United States Senator Hoke Smith for attacking Great Britain because her blockade interfered with American commerce.

"I am confident," said Mr. Gray, "that if by any mischance Germany should win over the Allies, that within five years the United States would be attacked. Germany is strongly entrenched in South America, and it would not be difficult for a victorious Germany to regard the Monroe Doctrine as a scrap of paper."

"When I opposed Senator Smith's views recently as to Great Britain's interference, I called attention to the fact that Great Britain had destroyed no American ships, had sacrificed no American lives and had entered upon no piratical course of frightfulness and barbarity."

"The New York Herald forcefully and aptly said editorially a few weeks ago that the South did not put the price of cotton above the price of a life. That statement cannot be reiterated too emphatically or too often. If there was a flurry in the cotton States when war began, that was but natural."

"Let me tell through the Herald of the changed conditions and how the declaration of cotton as contraband will only slightly, if at all, be felt by the South. This morning the Herald printed an interview with John K. Ottley, vice-president of the Fourth National Bank of Atlanta, explaining how that institution was prepared to lend more than a million on stored cotton up to three-fourths the market value of the commodity."

"Tonight I have information that the Third National Bank of Atlanta has agreed to this scheme and that the Central Trust and Banking Corporation, of which Asa G. Candler is president, not only will lend more than \$1,000,000 on cotton, but that Mr. Candler has organized a company which has contracted for a warehouse in the suburbs of Atlanta to store 200,000 bales of cotton."

"Other banks must needs follow, and this means that there will be available in Georgia alone between \$35,000,000 and \$40,000,000 for cotton loans."

"Since the cotton crop will be at least 3,500,000 bales short this year, it may be safely estimated that two-thirds of the crop will be marketed at good prices. Of the one-third which may be held, there will be less than 3,000,000 on which money will be sought. This means that Georgia's share of cotton held will be about 600,000 bales. The amount necessary for financing the loans, with the market value at 12 cents per pound, will be a little more than \$25,000,000."

"And even if the South's condition was not so splendid there would be no reason to press Great Britain on the subject of interference with our overseas trade. She is doing everything possible to avoid injuring the United States and yet protect herself and her allies in a war which they are waging for democracy against Prussian militarism."

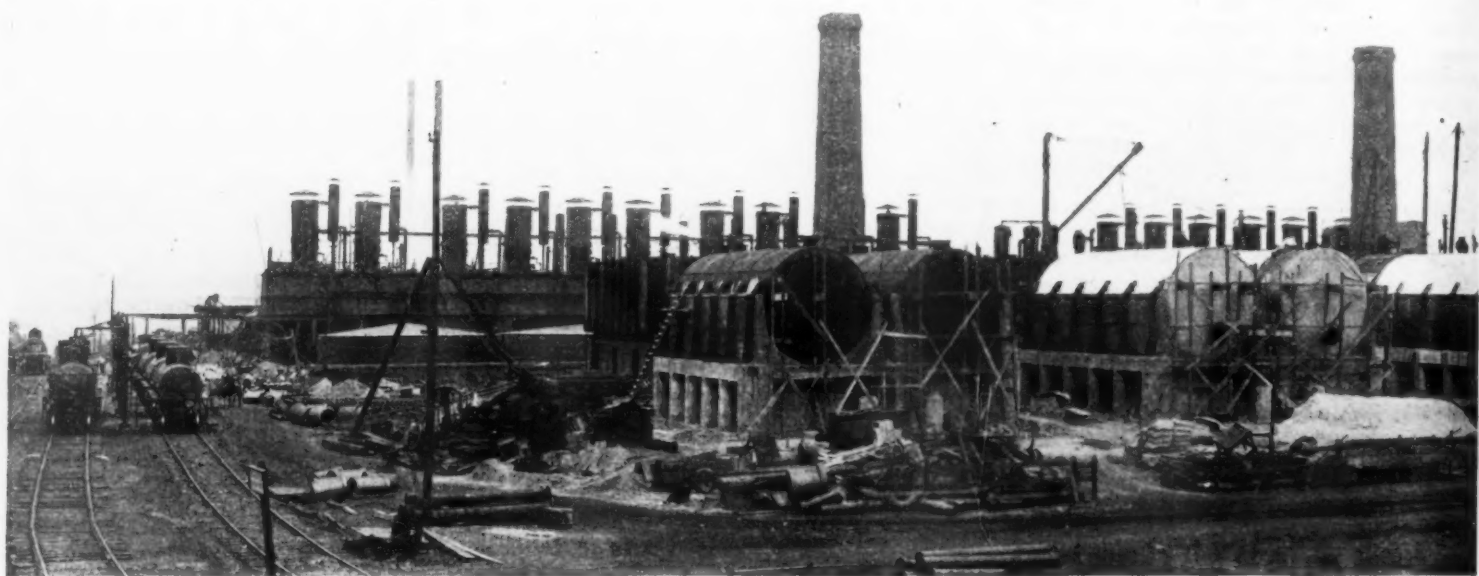
\$1,000,000 Oil Refining Improvements by the Standard at Baltimore

Whenever a new source of raw materials capable of industrial development has been found in any region south of Baltimore and tributary to the Atlantic seaboard, even in the West Indies and South America, it has been habitual for the manufacturing interests of Baltimore to come forward and promote the development of this new industry. Examples are found in the development of Turks Island salt in the West Indies, the early importation of Peruvian guano and later of guano from Navassa, Orchilla Islands, and elsewhere; the Maryland Steel Co.'s plant founded on foreign ores and now controlling vast supplies in Cuba and many

has now been greatly increased. In accordance with the policy of the Standard Oil Co. of New Jersey, by the time transportation facilities were adequate to the delivery of considerable quantities of crude Mexican petroleum on the east coast, the ships found ready for them a 35-foot channel extending from the main channel of the Patapsco River direct to the wharves of the Standard Oil Co. at Canton, so that the largest tank steamers afloat can unload directly at these docks. In the meantime the very essential additions to refining methods and to refining capacity have been quietly going on, until at this time there are adequate facilities in the

is pumped by steam to the appropriate stills. Perhaps the pumping system of this great refinery indicates more clearly than any other feature the efficiency of the system. A large power plant of modern up-to-date tubular boilers is supplied with fuel by run-of-mine coal from the Cumberland, Md., and various Pennsylvania coal fields. The steam here generated not only supplies the pumping system, by which oil from any tank in the refinery can be delivered into any other tank, or into any of the oil stills or agitators, but after the steam has served its purpose in pumping at neutral pressures the low pressure exhaust steam is still suitable for the steam distillation, which is a great factor in all modern refineries, inasmuch as it effects distillation of oils of better quality than can be had with dry distillation by distilling at lower temperatures and with less cracking.

It is evident that steam power cannot be distributed to all parts of a large refinery, except under considerable



GENERAL VIEW OF PORTION OF STANDARD OIL REFINERY, BALTIMORE.

other enterprises. There was also the superphosphate industry, based on the phosphates of Charleston, S. C., and later Florida. Even the sugar industry of the West Indies depended upon Baltimore in the early days for its refining as well as upon Philadelphia and New York, and Baltimore was for years one of the leading sugar markets of the world. Again, the tendency to transport crude petroleum over long distances by pipe lines to the seaboard brought a considerable portion of the refining of this raw material to Baltimore, in order that the refined products might be distributed from this center to the South. As early as 1875 such a pipe line delivered crude petroleum to the Baltimore United Oil Co. at Canton, which afterwards became the property of the Standard Oil Co., and from that time on petroleum refining has been a thoroughly established industry in Baltimore; and, while the refineries of Marcus Hook, near Philadelphia, and the gigantic refineries of Bayonne, N. J., and Long Island, N. Y., have greatly exceeded in output the product from the Baltimore works, this Baltimore refinery has nevertheless continually taken part, not only in the distribution of refined products of all kinds to the South, but in the export trade to Europe, and it is safe to say that there is no variety of petroleum product of considerable consequence which has not been made commercially at the Baltimore plant.

Within the last two years additional importance has been given to the Baltimore refinery by a new condition in petroleum economics—the development of the Mexican oil fields.

No sooner did these fields acquire commercial importance than the utilization of these Mexican crude oils was projected for the manufacture of asphalt products, even before transportation facilities were sufficient to admit of the cheap hauling of Mexican crude petroleum to the east coast of the United States. Enlargements of the Baltimore plant were immediately begun, and the entire relative importance of the refinery

Canton plant for converting Mexican oil into all of the products for which it is best suited.

The Canton Plant.

The Canton plant of the Standard Oil Co. covers about 25 acres, and this area is compactly filled with tanks, stills, shops and all the various structures and departments needed in a big business of this character. It is located in Canton, an industrial suburb of Baltimore, directly on deep water in the lower harbor. In addition to the adequate waterfront, the refinery has its own railroad tracks running through the plant and connecting the different departments. These tracks also extend to the company's docks and warehouses, and have direct connection with the Pennsylvania, Baltimore & Ohio, Western Maryland and Canton railroads, giving direct facilities for the prompt receipt or shipment of cars on all the railroad lines entering the city.

With its own docks at the plant and its own barge and tug system, complete facilities are available for domestic water shipments to Chesapeake Bay and coastwise points and for foreign shipments to all parts of the world. In addition to the facilities for handling Mexican oils, a direct pipe line, connecting with the New York, Pennsylvania, West Virginia, Ohio, Illinois and Oklahoma fields is maintained. The refinery itself receives the crude oils from the United States oil fields by direct flow into a large number of crude oil tanks, varying in capacity from 25,000 to 55,000 barrels each. In a similar way the thick, heavy Mexican crude is delivered from the tank steamers to powerful steam force pumps, which deliver this thick crude oil into appropriate tanks set aside for this trade. In these tanks, whether the oil to be used is United States oil or is thicker Mexican crude, the storage is sufficient to allow ample time for the oils to settle and deposit whatever water and sediment is present in the oil. From these tanks the oil

pressure, and yet where this steam is used for steam distillation the pressure must be reduced to a very small amount in order to be effective in aiding distillation. Usually this reduction is obtained by the mechanical uses to which the steam is put, such as pumping, developing power for various purposes, including generating electricity. Therefore, the steam necessary for aiding distillation at low pressure is made to do useful mechanical work at the same time that its pressure is reduced to the necessary stage. Therefore it can hardly be said that the cost of the mechanical power furnished by the steam costs any considerable amount, inasmuch as its pressure must be reduced at the point of utilization in any event, whether it has done useful work or not. Nevertheless, the facility with which electrical power can be transmitted from one portion of such a plant to another has caused the use of much of the surplus pressure of steam in developing an electrical system, serving many small mechanical requirements of the plant, such as in the tin-can factory, packing-box factory, etc.

The first process of oil refining consists in pumping the crude oils into appropriate stills, where, formerly, the gasoline and kerosene were distilled separately and the residuum was pumped into smaller stills, where, by the ordinary cracking process, further amounts of low-grade gasoline and burning oils were produced and paraffine lubricating oils and paraffine wax. Present improvements in the distillation system in most refineries include distilling the crude oil in the same still from beginning to end, leaving nothing but coke or tar as the final residuum, according to the demands of the trade. The refinery is adequately supplied with agitators for removing coloring and odor from the gasolines, kerosenes and other oils by mechanical treatment with sulphuric acid and soda, the consumption of these chemicals being very large in quantity and making this

September
refinery a
The spent
in the fer
a complet
down the
paraffine
paraffine
cooled by
provides
point of t
tillation.
this work
lates, wh
in close c
exchange
ing the s
the Balti
introduce

SHOWING
tion of h
for the p
with an
from cru
earth filte
it is pos
product f
locomotive
grades of
poses, et
lamps, fr
United S
lower pri
able qual
suitable
are produ
oils, Dies
oils, para
car axles
eating i
marine i
wax can
of aspha
phalitic
various
and asph
final resi
its freed
new still
into deta
heat fro
utilized,
crating l
Every
ticular k
sold and

Perhaps
ates more
f the sys-
te tubular
coal from
ania coal
plies the
in the re-
into any
team has
sures the
the steam
modern re-
oils of
cracking.
distributed
siderable

refinery a good customer of the acid companies nearby. The spent acid, further, is finally turned over for use in the fertilizer factories in the neighborhood. There is a complete ammonia refrigerating system for cooling down the lubricating oil distillates, for shelling out the paraffine wax, and a complete plant for pressing the paraffine wax from these distillates while they are still cooled by the ammonia system. A separate building provides for the sweating system of raising the melting point of the paraffine wax. In connection with the distillation, late improvements in the refining methods at this works include preheating the crude oils, or distillates, when they are to be redistilled, by bringing them in close contact with hot vapors leaving the stills. This exchange of heat from the hot oil vapors to the oil entering the stills for distillation is an improvement which the Baltimore works was one of the first refineries to introduce. The refinery also was a pioneer in the addi-

tion of high vertical columns above the crude oil stills for the purpose of better separation of the products with an increase in the proportion of gasoline obtained from crude oil. By the distillation, acid refining, fuller's earth filtering and other features of this refining system it is possible to produce every variety of petroleum product from light gasoline to heavy lubricating oils for locomotive cylinders, etc. The products include all grades of gasoline for stoves, automobiles, cleaning purposes, etc., the various grades of oil for burning in lamps, from the water-white grade, purchased in the United States, to the standard white, shipped at a lower price for use in foreign countries. Then considerable quantities of burning oils of a heavier character, suitable for engine headlights, lighthouse lamps, etc., are produced, as well as various grades of gas oils, fuel oils, Diesel engine oils, and the whole list of lubricating oils, paraffine waxes, special oils for lubricating railroad car axles, oils with very low cold test, suitable for lubricating ice machines, special oils for the cylinders of marine locomotives and stationary engines, paraffine wax candles, axle greases, cup greases and a long list of asphaltic products, manufactured from Mexican asphaltic base crude oil, from road binders through the various grades of paving asphalts to roofing asphalt and asphalts of peculiarly elastic properties. Even the final residual collected finds a special use on account of its freedom from sulphur and ash. Among the 25 to 30 new stills in process of erection it would lead too far into details to explain the methods by which the waste heat from the fires which produce the distillation is utilized, not only for preheating the oils, but for generating low-pressure steam.

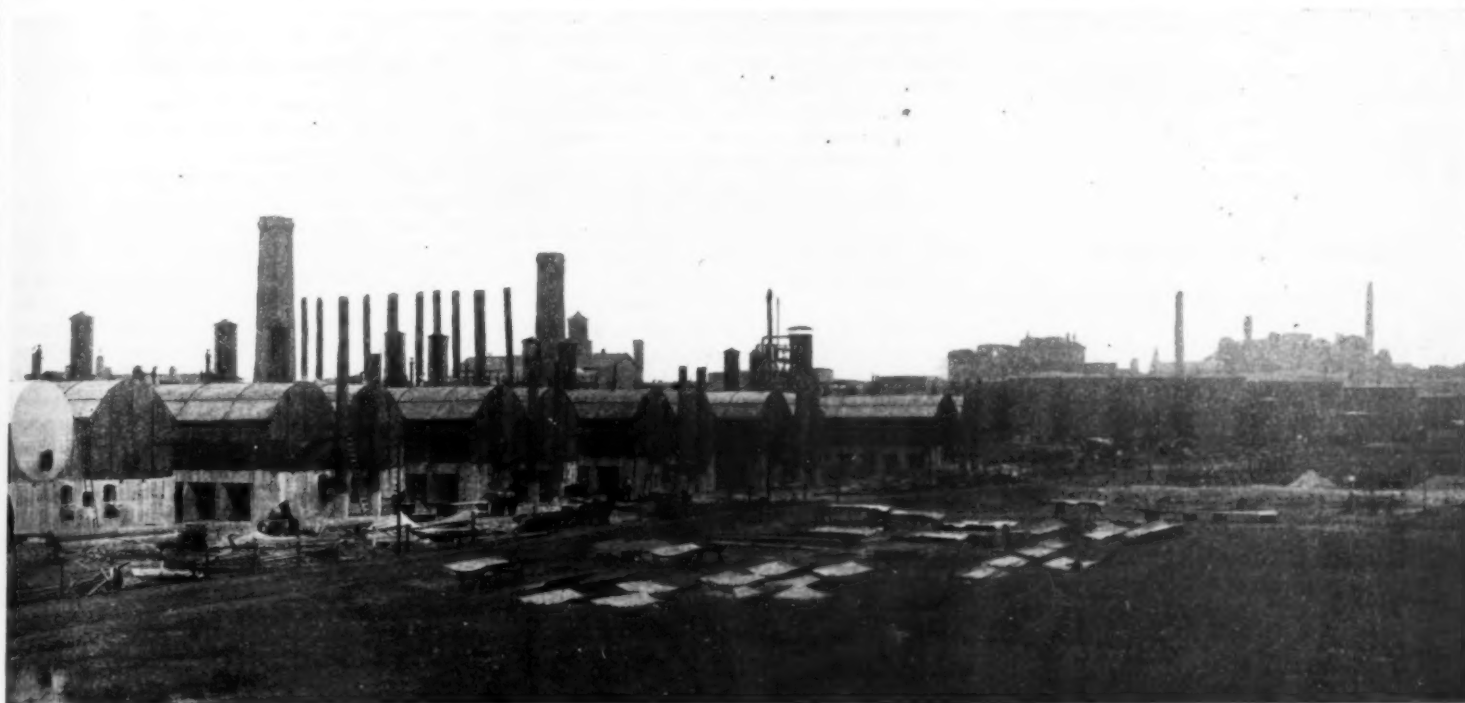
Everything produced in the refinery demands a particular kind of package to contain it while it is being sold and shipped to the point of consumption. Wood

barrels are constructed in the complete barrel factory, which the company maintains at this plant, while specially designed steel barrels for shipping gasoline and a great variety of tin cans for greases, lubricants and many specialties are carried in stock, although manufactured at the company's plants at other points. Other barrels of necessarily low cost are required for shipment of the various grades of asphalt. Again, much of the kerosene oil and gasoline are sold by tank wagon delivery, and the plant includes a department for building tank wagons, and here will be built all of the tank wagons used in the several States covered by the Standard Oil Co. of New Jersey.

Various other improvements of a general character have been made in the different departments, all looking to increased capacity and keeping the plant up to its highest state of efficiency. The need for these enlargements has been brought about by the increased business

pliances and tools for the conduct of such work. It is a matter of interest that the casual visitor to the barrel factory would at first think he was within a building with wooden floors, columns, etc. This was true a few years ago, but, without stopping work, reinforced concrete was substituted for the wooden construction, the molds being fastened directly around the wood, which was removed and cement poured in its place, leaving all the marks of the previous wooden construction still evident.

Illustrative of the complete distribution system of the company is its Pratt-street building, which is located in the upper harbor basin in the heart of the city. Here the division headquarters are located, likewise all of the department heads, so that every detail of the division business is under the immediate supervision of the managers. The building is of reinforced concrete construction, and is quite large. In addition to pro-



SHOWING IN FOREGROUND NEW STILL UNDER CONSTRUCTION.

tion of high vertical columns above the crude oil stills for the purpose of better separation of the products with an increase in the proportion of gasoline obtained from crude oil. By the distillation, acid refining, fuller's earth filtering and other features of this refining system it is possible to produce every variety of petroleum product from light gasoline to heavy lubricating oils for locomotive cylinders, etc. The products include all grades of gasoline for stoves, automobiles, cleaning purposes, etc., the various grades of oil for burning in lamps, from the water-white grade, purchased in the United States, to the standard white, shipped at a lower price for use in foreign countries. Then considerable quantities of burning oils of a heavier character, suitable for engine headlights, lighthouse lamps, etc., are produced, as well as various grades of gas oils, fuel oils, Diesel engine oils, and the whole list of lubricating oils, paraffine waxes, special oils for lubricating railroad car axles, oils with very low cold test, suitable for lubricating ice machines, special oils for the cylinders of marine locomotives and stationary engines, paraffine wax candles, axle greases, cup greases and a long list of asphaltic products, manufactured from Mexican asphaltic base crude oil, from road binders through the various grades of paving asphalts to roofing asphalt and asphalts of peculiarly elastic properties. Even the final residual collected finds a special use on account of its freedom from sulphur and ash. Among the 25 to 30 new stills in process of erection it would lead too far into details to explain the methods by which the waste heat from the fires which produce the distillation is utilized, not only for preheating the oils, but for generating low-pressure steam.

Everything produced in the refinery demands a particular kind of package to contain it while it is being sold and shipped to the point of consumption. Wood

handled by these plants. Unless one should visit this refinery and be taken over the various departments, he would have but little idea of its wonderful scope and completeness. For example, the construction of various large steel tanks and receptacles for storing, distilling and selling the various products has required the erection of an entire new mechanical shop, which is two stories high and of reinforced concrete construction. It provides for machine and tank shops fully equipped with modern ap-

viding for executive and clerical forces, it is also used as a distributing depot for all of the company's oil products and specialties that are sold in lots smaller than carloads.

In this depot are also carried stocks of stoves and lamps, with complete stocks of repair parts, candles and devices of many kinds, as well as all of the various by-product specialties sold by the company. It is remarkable to note the great sale that has been developed for



NEW REINFORCED CONCRETE MECHANICAL SHOP, STANDARD OIL REFINERY, BALTIMORE.

lamps and stoves. These have been brought to a point of perfection for lighting and cooking and are being sold by the thousands. The handling of lamps and stoves by this company, it is understood, was brought about by its desire to secure devices for lighting and cooking that would give the very best results and eliminate all danger. Both of these products handled by the company are the result of close scientific investigation and inventive skill.

This central distributing building, being directly on the water, enables the company to maintain a quick barge service with its own tugboats to its refinery in the lower harbor, and trips are made at specified times each day to keep this depot well stocked with all of the products needed.

This building also adjoins the bay and river steamboat piers, as well as the coastwise steamers, while all of the railroad and express shipping points are but a few blocks away. Its location, therefore, gives it ideal and complete facilities for the prompt and ready handling of any size order to any point in the district's territory.

It is estimated that the recent enlargements of the Canton plant have cost over \$1,000,000, which is merely indicative of how the leading industries of Baltimore are enlarging their operations to care for the expanding trade of the country.

Electric Vehicle Convention.

The plans for the sixth annual convention of the Electric Vehicle Association of America, which will be held in the Hotel Statler, Cleveland, O., October 18 and 19, are rapidly nearing completion. The tentative program provides for the following papers:

"Industrial Trucks in the Service of the Pennsylvania Railroad Co.," T. V. Buckwolder, Pennsylvania Railroad Co.

"The Electric Taxicab," I. S. Scrimger, secretary and general manager, Detroit Taxicab & Transfer Co.

"The Hartford Electric Co.'s Experience With the Battery Maintenance and Battery Exchange System," Samuel Ferguson, vice-president Hartford Electric Light Co.

"The Function of the Electric Garage," R. Macrae of the Commonwealth Edison Company of Chicago.

"Comparative Development of General Power and Commercial Electric Vehicle Loads and Function of Power Salesmen as Electric Vehicle Solicitors," H. H. Holding, general car representative, and S. G. Thompson, general electric vehicle representative, Public Service Electric Co.

"Problems We Are Facing and How They May Be Met," George H. Kelly, secretary Baker Rauch & Lang Company and president Electric Automobile Manufacturers' Association.

"Field for the Small Electric Delivery Vehicle," Chas. A. Ward, secretary-treasurer Ward Motor Vehicle Co.

"Electric Vehicle in Municipal Service," Arthur J. Slade, consulting engineer, New York city.

At this convention an opportunity will be given manufacturers of commercial, passenger, industrial trucks and electric wheel chairs to exhibit their products, and those desiring space should communicate with M. R. Berry, Electric Products Co., 10674 Dupont avenue, Cleveland, O.

Municipal Wharves at Pascagoula.

Pascagoula, Miss., August 27.—[Special].—Pascagoula has acquired by purchase from Hunter Benn & Co. of Mobile, Ala., a strip of land on the east side of the East Pascagoula River, 466 feet long by 200 feet depth, and also from Mrs. R. J. Loughbridge, a strip 185x200 feet. The purchase price was \$13,020, or \$20 per front foot. This land is to be used for the purpose of city for public wharves and docks, as required by the Rivers and Harbors bill at the last session of Congress. The land purchased was selected by the United States Board of Engineers.

The Rivers and Harbors bill requires the city of Pascagoula to acquire and reserve for public use a strip of land along the river 800x200 feet, so that it will have to acquire another 100 feet.

As soon as this matter is settled the work of dredging the Pascagoula River to 22 feet will commence, as there is already an appropriation for this purpose.

Building on Solid Lines in East Texas

CO-OPERATION BETWEEN BANKERS, BUSINESS MEN, MANUFACTURERS AND FARMERS FOR COMPREHENSIVE DEVELOPMENT WORK.

[Special Correspondence Manufacturers Record.]

Houston, Tex., August 23.

The South and East Texas Development League was born at Houston, Tex., on the 4th day of June. In advance of that meeting there was gathered together the most representative body of Houston's leading financiers, business men, manufacturers and property-holders that ever came together since this city became a reality.

At that meeting it was decided to invite the participation of the leading men of 56 South and East Texas counties, of which Houston is the metropolis, as well as the chief railroad and commercial center, and at this convention they made a pledge to the commercial and industrial bodies of all the towns and communities embraced in the 56 counties that they would pay all expenses for organization and maintenance until such time as the league would prove with their co-operation that it was worth while as a community builder.

The reason for this action on the part of Houston was the firm conviction that the city had grown ahead of the country; that more attention had been given to skyscrapers and hotels than had been devoted to industrial, agricultural and livestock activities.

The meeting on June 4 brought together a thoroughly commanding body of men from all sections, and Houston met them with a large delegation of her best-known citizens, and a glad hand was extended. John T. Scott, president of the First National Bank of Houston, was made president. Tom Richardson was elected manager-secretary, with a vice-president from each of the 56 counties, and this roster is now complete. There is an executive committee at large, made up as follows: B. R. Norvell, president American National Bank, Beaumont; J. E. Angly, vice-president Guaranty State Bank, Palestine; A. A. Hacker, wholesale grocer, Brenham; Dr. W. B. Bizzell, president A. and M. College of Texas, College Station; F. B. Lander, vice-president First National Bank, Victoria; Robt. Lindsey, large landholder, Nacogdoches; Judge W. S. Strickland, capitalist and investor, Eagle Lake. At these cities general community conventions have been held, in addition to more than 90 other meetings throughout the entire district.

One of the chief purposes of the organization is to bring the city and country closer together; the men of the county-seats and other towns to meet and keep in closer touch with the farmers, and at these meetings the county agricultural demonstration agent is usually the chief and most interesting attraction. Both the farmers and business men, and particularly the bankers, take part in constant common-sense discussion rather than extended speeches. The results thus far achieved are way beyond expectation. It is extremely interesting to note that when bankers, business men and farmers get into an extended discussion about how the bankers and business men can help the farmers, how both can make marketing better and all those other things which are helpful in building up a prosperous country, it is almost impossible to adjourn such a meeting.

At many of these meetings the business men attended with the promise that they would adjourn at a given hour. It has been seldom that a motion to adjourn at the time decided upon carried; in fact, there are frequent occasions when it takes the second, third or fourth suggestion as to adjournment to be acted upon.

In some places communities have already joined in buying improved cows and selling them to the farmers on time at cost. C. J. Von Rosenberg of La Grange, vice-president for Fayette county, got a suggestion through one of the talks and announced that he would go home and buy fertilizer by the carload and sell it to the farmers of his county at retail for just what it cost.

The meetings are usually held under the auspices of the local commercial body, and as a result of such meeting at least three special committees of five each are selected to conduct competitive events at given dates in the future, with no citizen having the right to speak more than once in all three of the meetings. Women's meetings held at the time of these other conventions frequently result in the organization of civic bodies, which have proved a tremendous benefit. Frequently all of the business houses close for afternoon meeting and fill

the largest building obtainable to talk and discuss plans through which they can advance the welfare of the community as an entirety.

The men who compose the executive committee at large, as well as those who fill the position as vice-president for the several counties, in connection with liberal help from the transportation companies, newspapers and commercial bodies are rapidly building a concrete community organization which is making itself felt for advancement in all of this part of South and East Texas.

The Horrors and the Folly of War.

A recent contribution to the literature of the war is Mr. Arthur E. Stilwell's interesting book, "To All the World (Except Germany)."

Mr. Stilwell has had a wide business experience as a financier and as the builder of the Kansas City Southern Railway and the Kansas City, Mexico & Orient Railway. The book is dedicated to the King of the Belgians and to Henry Ford. In his introduction the author states that it is his purpose to present the horrors of the present conflict and its utter futility; that the neutral nations, particularly the United States, shall take an early opportunity to adopt measures to prevent a repetition of such savagery. He considers the present moment psychological because the evidence now is that the European conflict will come to an end through the exhaustion of human nature. Every nation engaged in it, therefore, should be in a receptive mood, open to any reasonable suggestion which would seem to prevent a recurrence.

Mr. Stilwell charges the German Emperor with responsibility for the outbreak. He elaborates upon his thesis that war is a disease or a mesmerism by showing that the nature of the German people has been changed by a military despotism. As to the futility of the struggle, the very work which Germany is striving hardest to accomplish, namely, the destruction of England's power, would in reality be no advantage whatever to the German Empire. Weak neighbors are not an asset. Even if Germany wins, she loses.

Following is his suggested constructive program, briefly summarized:

The Hague Tribunal—Each nation that recognizes the authority of this tribunal to send its representatives to organize the first congress and agree to furnish one-tenth of its present army and naval force, as an international police, subject only to the orders of The Hague Tribunal.

The Secretary of Peace—To spread the peace idea and to point out the benefits of the peace propaganda to all nations.

Limited Naval Construction and Limited Armies—If the leading nations of the world see how greatly it is to their advantage to become members of The Hague Tribunal they will doubtless be ready to consider the limitation of armaments and to accept the further and logical step that the present fighting strength be gradually reduced.

Free Trade—"Free trade or partial free trade would be a big stride toward the state of international peace and accord."

Registration at The Hague—For a nominal fee every company with foreign investments would have a registration at The Hague. This would give its securities an international standing and in time of war prevent them from being seized or repudiated by any of the belligerent nations.

An International Flag—For all neutral nations, and it should make the ship which flies it legally immune from capture or interference of any kind.

State of Control of Armament Works—All explosives as well as firearms of whatever character should be manufactured by the Government and sold only upon proper representations.

The Spy System—Bad from every standpoint. Should be abolished.

A Neutral Language—English should be that lan-

guage, because it more nearly approximates it now than any other. Even Germany would fall in line with this idea when she found that it was to her advantage in the markets of the world.

Suffrage for Women—Woman being one of the chief sufferers from war, it is natural and right that she should have something to say about it.

Finally, "The Sermon on the Mount will yet have its day of universal acceptance and will be understood by the so-called Christian nation. Then there will be no more war."

Mr. Stilwell's arguments and illustrations are presented with a degree of plausibility and force, and one follows his idealistic theories with sympathetic interest, whether he accepts all of them or not.

Industrial Activities South.

During August the MANUFACTURERS RECORD published 4229 items relative to industrial and building developments, railroad operations, financial enterprises and general business interests of the South and Southwest. A total of 33,254 items had been noted during the preceding seven months. Thus the entire number for eight months of 1915 has amounted to 37,483 items. These have been published in the Daily Bulletin and weekly in the MANUFACTURERS RECORD, and were summarized for each month previous to August.

The Machinery, Proposals and Supplies Wanted columns for August have contained a number of requests from foreign subscribers and readers, the countries represented including Cuba, Panama, Brazil, Colombia, Argentine, Mexico, Curacao, British West Indies, New Zealand, Malta, England, France, Norway, Spain, Greece, Bulgaria, Russia and Australasia.

The items for August are detailed in the following table:

Industrial and Developmental.	
Bridges, Culverts, Viaducts.....	71
Canning and Packing Plants.....	21
Clayworking Plants.....	12
Coal Mines and Coke Ovens.....	14
Concrete and Cement Plants.....	7
Cotton Compresses and Gins.....	33
Cottonseed-oil Mills.....	14
Drainage Systems.....	32
Electric Plants.....	78
Fertilizer Factories.....	8
Flour, Feed and Meal Mills.....	34
Foundry and Machine Plants.....	15
Gas and Oil Enterprises.....	57
Ice and Cold-storage Plants.....	34
Iron and Steel Plants.....	6
Irrigation Systems.....	1
Land Developments.....	34
Lumber Manufacturing.....	44
Metal-working Plants.....	8
Mining.....	77
Miscellaneous Construction.....	65
Miscellaneous Enterprises.....	81
Miscellaneous Factories.....	150
Motors and Garages.....	58
Railway Shops, Terminals, Roundhouses, etc.....	4
Road and Street Work.....	265
Sewer Construction.....	74
Telephone Systems.....	7
Textile Mills.....	38
Water-power Developments.....	7
Water-works.....	79
Woodworking Plants.....	35
Buildings.	
Apartment-houses.....	82
Association and Fraternal.....	30
Bank and Office.....	63
Churches.....	84
City and County.....	51
Courthouses.....	30
Dwellings.....	411
Government and State.....	29
Hospitals, Sanitariums, etc.....	51
Hotels.....	32
Miscellaneous.....	37
Railway Stations, Sheds, etc.....	13
Schools.....	302
Stores.....	201
Theaters.....	13
Warehouses.....	75
Railroad Construction.	
Railways.....	95
Street Railways.....	7
Financial.	
Corporations.....	71
New Securities.....	378
Fire Damage, etc.....	3,518
Machinery, Proposals and Supplies Wanted.....	177
	534
Total for August.....	4,229
Items previously detailed since January 1.....	33,254
Total for eight months.....	37,483

Canned Fruit, Grapes, Apples, Etc.

Abram De Sola, P. O. Box 95, Curacao, D. W. I.: "Please put me in connection with a first-class dealer in California, as also New York, of canned fruits, such as pears, peaches, apricots, etc. If prices f. o. b. steamer New York suits convenience, I can guarantee regular sales monthly of a certain number of cases grapes in boxes; also apples."

"Lumber: America's Second Greatest Industry"

By R. H. DOWNMAN, President National Lumber Manufacturers' Association.

[Mr. Downman is a Virginian by birth, though for many years he has lived in New Orleans. He is an authority on the lumber industry, being a very large owner of cypress timber lands and one of the largest lumber operators in the South. He is also closely identified with many business interests in Louisiana and Texas.—Editor Manufacturers Record.]

Representatives of the lumber industry opened a conference with the Federal Trade Commission at Chicago on July 19 with the following significant statement:

We are here today representing an industry which has an investment of practically \$2,250,000,000 in the way of raw material and development—an industry which is the third largest in the point of employment of all industries in the United States, engaging 695,000 men, upon whom are dependent 3,475,000 people. The success of the employer and the employe are absolutely interdependent. The condition of this business in the last eight years has been one of demoralization. Practically little or no profit has been made during that period. At the present time an actual loss in the business is occurring, not only of profits, but an unavoidable, but nevertheless shameful, waste of forest resources. In some instances it will be demonstrated that the assets being converted into lumber are being sold on a basis which yields the owner nothing. This situation is due, more than any other thing, to overproduction and uncontrolled competitive conditions.

This was followed by a large amount of statistical information as to lumber output, selling prices, production costs and carrying charges, which abundantly confirmed the opening paragraph. Continuing, the lumbermen said to the Federal Trade Commission:

We present ourselves to this body at its own invitation. We earnestly urge the Commission to make the fullest possible investigation of our trade conditions—and this for the reason that we feel that if this body becomes thoroughly conversant with the industrial and economic situation as today exists in the lumber manufacturing business you will not only permit some plan for relief, but of your own initiative urge such a course.

It is not alone our own business interests that are being sacrificed on the altar of unlimited and uncontrolled production of timber products, but indeed the broader interest of the public itself is involved. The wicked and needless waste of a prime, natural necessity would be impossible in any other civilized country in the world. With us waste results from fear of law; in Europe waste is made impossible by law.

The suggestions to be made to this honorable body by these business men will in no way encroach on the anti-trust laws of our nation. It is not our purpose to urge a course of action that runs counter to the fine spirit of justice that illuminates the interpretation by our courts of these laws. The rule of reason is the very essence of the thought we seek to present. At the base of all laws is to be found the purpose of conserving public welfare. This is the ultimate view of our courts in analyzing the purpose of our anti-trust laws. We, as business men, although wishing to benefit our own interests, seek by the suggestions to be made to this Commission to so order our affairs that self-interest will not obscure public welfare.

Although deplorable, the condition of the lumber industry is no worse than that of other leading industries whose raw material is drawn from the natural resources of the country. The time is rapidly approaching when the public will realize that the popular demand for conservation cannot be attained so long as there is an equally popular demand for unrestricted competition. Even though there are still some who believe that competition is the life of trade in certain lines, there are many others who are coming to see that only through co-operation can our natural resources of timber, coal, oil and minerals be fully and rightly utilized.

The coal operators were before the Federal Trade Commission earlier in the year. The lumbermen had a two days' session in Chicago in July, followed by later conferences with the Commission at Spokane, Seattle, Tacoma, Portland and San Francisco, which have clearly shown the causes of the present forest waste and offered suggestions for its future prevention. All the lumbermen are asking is that they be given the legal right, either through permission of the Federal Trade Commission, or legislation, if necessary, to operate their plants at a rate which will supply the quantity of lumber actually demanded by the market, and that they be no longer compelled by cut-throat competition and fear

of the law to pursue a policy which is ruinous to themselves and without benefit to the public.

The manner in which the lumbermen were received at these hearings indicates a sympathetic interest and desire for helpfulness on the part of the Federal Trade Commission, and even though the Commission may decide that it does not yet have the power necessary to alleviate the conditions, a long step has been taken in the direction of educating public sentiment to a right conception of the conditions which surround the production and distribution of forest products.

But the lumbermen are by no means pinning their entire hopes for improvement in their industry upon favorable trade regulations. They are undertaking to help themselves in other directions. Overproduction is counteracted by increasing consumption, as well as reducing production, and the lumbermen are entering upon a vigorous campaign to promote a larger consumption of their products. They have raised a fund to finance the trade extension department of the National Lumber Manufacturers' Association, which will at once begin a five years' campaign to educate the consumer as to real merits and right uses of wood. Up to the present time no other material has been so largely used with so little discrimination or scientific knowledge as has lumber. Because wood was once almost the only widely available building material, the manufacturers of that time were under no necessity to teach the public how to use their products. In this day of specialization and of substitutes, the manufacturer of forest products must be prepared to meet competing materials upon a common ground of service and scientific tests if he is to get his share of the market requirements. This is the problem before the trade extension department, which the lumbermen have financed. It will prepare engineering data upon the properties and uses of woods for architects and engineers. It will promote the use of fire-retardants to lessen the hazard of wood construction, and of preservatives to decrease the loss of timber from decay. It will supply helps to the retail dealer in the merchandising of the product; furnish information upon how to build to the consuming public, and co-operate with all allied industries in promoting the use of wood for every purpose for which it is the best available material.

Another recent activity of the National Lumber Manufacturers' Association is the successful establishment of an inter-insurance exchange to carry risks from damage by fire to sawmills, lumber yards and planing mills in connection therewith. Inter-insurance in a number of lines where risks are isolated, carefully selected and subsequently regularly inspected, has made wonderful savings in the protection of business men from fire losses. There are a number of highly successful inter-insurance exchanges in the lumber field, and plenty of room in which the exchange established by the National Lumber Manufacturers' Association may grow to a point at which it will give the cheapest possible protection. Operating at absolute cost, with all profits to take the form of dividends to subscribers, the National Lumber Manufacturers' Inter-Insurance Exchange has a bright future ahead of it.

One of the earliest needs felt by the lumber manufacturers when they reached the point of perfecting the National organization was that for a credit rating service, dealing exclusively with the lumber industry. For this reason the National Lumber Manufacturers' Credit Corporation was established 11 years ago, and has made steady progress to date, when it has more subscribers, is giving better service than ever before, and has reached a firm financial foundation. Like the inter-insurance exchange, the credit rating service for the lumber manufacturers is operated at cost, and any profits made will go into improvements in the service. The "Blue Book" of the National Lumber Manufacturers' Credit Corporation is consulted daily in a thousand lumber offices,

and is sufficient evidence of what any group of business men may do for themselves if they will only pull together in associated effort.

The National Lumber Manufacturers' Association is a federation of 12 regional organizations of lumber manufacturers, which represent every section of the United States and every principal commercial kind of timber. Organized in 1903 in a rather loose way, the National Association has steadily grown in influence and helpfulness until it has come to be recognized as the logical mouthpiece for the aspirations and desires of the second largest industry in the United States. In order more effectively to accomplish its purposes, the National Association has recently been incorporated, with the following statement of purposes in its charter:

To gather and disseminate information upon the production and shipments of lumber, market conditions, and the supply of forest products; to make technical and other investigations of the properties and uses of woods; to promote uniformity and efficiency in the methods of manufacturing and distributing lumber and allied products; to establish, maintain and furnish, either directly or through the medium of other corporations, firms or persons, credit rating, collection, legal and traffic service for the benefit of the lumber trade; to promote the use of forest products by all lawful means, and to furnish all lawful information concerning the manufacture, use and sale of forest products.

In the popular view, the lumberman is often regarded as a backwoodsman, who has little in common with modern business conditions. This may have been true once. The lumberman now realizes, however, that the making and selling of lumber requires all the ability, energy and salesmanship that is devoted to the production and marketing of any great commodity. The lumberman of today, therefore, is studying efficiency systems, installing the latest labor-saving devices in his plant and entering upon large-sized advertising campaigns. He realizes that changed conditions necessitate changes in methods. He has been near the slough of despond, but he has set his face forward, and with the help of an enlightened and friendly public spirit he expects to conquer his difficulties and take the place that rightfully belongs to him among the leaders of the nation's business men.

HOUSTON GETS ITS FIRST BOAT.

Inauguration of Regular Service by a New York-Houston Line of Steamships.

The Satilla, the first of the Southern Pacific Company's New York-Houston line of steamers to make the trip, arrived in Houston Monday, and thus opened the Houston ship channel to the commerce of the world. The Satilla reported heavy seas, but no trouble, apparently having been just in the wake of the storm. The trip up the channel from Galveston Bay was without incident, the storm having done no damage whatever to the channel. A large number of citizens of Houston was at the port to welcome the boat. It brought a miscellaneous cargo of some 260 items, including almost everything from iron and steel pipe to dainty lingerie. There were several thousand cans of canned goods, barrels of oil of many kinds, hardware, groceries, dry goods, etc.

A return cargo awaited the boat, which was scheduled to clear Wednesday evening on its return trip to New York. The outgoing cargo consists of rice, cottonseed oil, one auto truck made in Wichita Falls, Tex., consigned to Sydney, Australia, via New York; 35 tons of green hides and 1210 bales of cotton.

The Algiers, the second of the ships in the service, left New York August 20, and was due to arrive in Houston August 30. Regular service will be maintained hereafter.

American Gluten Wanted.

Beussan, Sides & Co., Salonique, Greece:

"Get some large and important firms to communicate with us directly and send us samples of gluten gum, to be delivered at Salonique; cost, insurance and risks of war to be provided for, no charge for package, and payment to be made in cash with a 5 per cent. discount when shipment is confirmed by usual documents."

To Develop Export Coal Through Charleston

THE STONEGA TO BEGIN SHIPMENTS OVER THE NEW PIER IN SEPTEMBER

The Stonega Coke & Coal Co. of Philadelphia, operating coal and coke properties in the Virginia coal field, will make the first export shipment of coal over the Southern Railway Co.'s new coal pier at Charleston, S. C., during the first week in September. The pier, which has just been completed, is modern in every detail of design, and is a concrete example of the ability of the management of the Southern Railway Co. It is designed to handle coal with a minimum breakage in dumping and maximum speed of delivery to vessels. Its loading capacity is estimated at from 1500 to 3000 tons of coal per hour, depending upon the character of the vessel being loaded.

The largest steamers and Government colliers can coal at the pier without difficulty, as the depth of water is 30 feet at mean low tide.

The convenient location of the port of Charleston, the deep water, and the fact that the Southern Railway coal pier is only about eight miles from the breakwater assures an active and growing export trade and bunker business.

The Virginia coal field in which the Stonega company operates comprises the coal and coke operations situated at Dickinson, Lee, Russell and Wise counties, Virginia.

The Stonega Coke & Coal Co. and allied interests own and control 120,000 acres of coal and timber land in Lee and Wise counties, Virginia, and in the adjacent counties of Harlan and Letcher, Kentucky. It has four coal and coke operations and two coal operations. Roda, the largest of which, has an annual capacity of 1,000,000 tons of gas coal. The Stonega company has a capacity of 750,000 tons of coke a year and a steam coal capacity of over 2,000,000 tons of coal a year. Roda gas coal and Stonega coke and steam coal are well known in the Atlantic States as well as in the Central West.

The Stonega Coke & Coal Co. now has representatives in Europe and South America negotiating sales of coke, gas coal, steam coal and by-product oven coking coal, and, shipping through Charleston, this company will undoubtedly play an important part in the export trade of the United States.

fell off almost 26,000,000 tons. The most notable decrease was in Ohio, where, because of strikes, the decrease was over 17,300,000 tons, or nearly half, as compared with 1913.

Activities in Eastern Kentucky Coal Mining.

Hazard, Ky., August 28—[Special].—All the mines in the Perry county coal fields around Hazard are now running full time, and a number of new operating concerns are soon to come into the field. Within the past 30 days at least a half-dozen leases have been made. The latest leasing company to organize is the Blue Diamond Coal Co. First operations will be on a tract of 1000 acres, reached by the First Creek branch of the Louisville & Nashville Railroad. It is expected that additional holdings will be leased adjoining.

The Kentucky Block Coal Co. was also organized recently. This company will operate about 500 acres in the new First Creek territory. The coal there is of an exceptionally fine quality, and is from five to six feet practically solid coal. Within 60 days the First Creek branch road will be completed and ready for shipments. By that time a number of the operating companies will be ready to begin shipping coal.

The North Fork Coal Co., immediately beyond the city limits at Lennet, was recently consolidated with the Daniel Boone Coal Co., and will start at once a number of important improvements there looking to increases in the plant. A new concrete tippie is under way, while a large number of miners' houses are to be built at once. An additional acreage has also been obtained.

At Lowthair, one mile from Hazard, up the North Fork, are the operations of the Ashless Coal Corporation. The Kentucky-Jewel Coal Co. is in close proximity. All are doing a prosperous business, operating all their mines to full capacity. From Lowthair the Buffalo Coal Co. is building three miles of railroad up Buffalo Creek to reach a boundary of about 5000 acres of rich coal properties.

The Raccoon Coal Co. at Douglas, a mile from Lowthair on the Lexington & Eastern main line, is now about doubling the output of six months ago. At Gloumaur the East Tennessee Coal Co. is shipping coal and making extensions and improvements at the same time. The first of the year will see a large increase from this plant. Two additional mines are being opened.

Here the Kentucky River Power Co. is starting a \$300,000 power plant to transmit electricity throughout the coal mining district of Hazard. The company was recently organized by R. L. Cornell of Norton, Va., and other Virginia and West Virginia people. The main building will be constructed of reinforced concrete and steel. The electrical transmission system will extend 15 miles and will cost \$25,000 to \$40,000. At least 5000 horse-power will be developed.

Since the development of the Hazard coal fields the population of Hazard has more than doubled. Good streets and sidewalks have been constructed and waterworks and electric lights established. A \$40,000 school building was completed a year ago, and there is here one of the best courthouses in the State.

An Inadvertence.

In the article published in the MANUFACTURERS RECORD of August 26 from our Durham correspondent it was inadvertently stated that the architect of the Geer building described in the article is Mr. A. C. Blossom of New York. It should have read Mr. Alfred C. Bosson, who is a well-known architect of New York, with offices at 366 Fifth avenue. Mr. Bosson is also the architect of the Merchants' Bank of Durham, which was mentioned in the same article.

Production of Coal in 1914.

The production of coal in the United States in 1914 was exceeded by that in only two previous years—1912 and 1913. In 1914 the total production of anthracite and bituminous coal amounted to 513,525,477 short tons, valued at \$681,490,643, according to C. E. Leshar of the United States Geological Survey. In 1913, the year of greatest production, the total was 569,960,219 short tons.

In 1914 the value of both bituminous and anthracite coal decreased slightly more than the tonnage, but the decrease in anthracite, the more valuable output, was slight. The production of anthracite in Pennsylvania decreased from 81,718,080 long tons (91,524,922 short tons), valued at \$195,181,127, in 1913, to 81,090,631 long tons (90,821,507 short tons), valued at \$188,181,399, in 1914.

The total production of bituminous coal and lignite decreased from 478,435,297 short tons in 1913, valued at \$565,234,925, to 422,703,970 tons in 1914, valued at \$493,300,244.

The decrease in the production of bituminous coal was generally distributed over the country, but there were seven States in which the production in 1914 was greater than in 1913. Two of these States, North Dakota and South Dakota, produce lignite only, and make relatively small output. New Mexico's increase was due to ability to supply markets ordinarily furnished by coal from Colorado, which in 1914 suffered from a serious strike. The other States that showed an increase were West Virginia, Kentucky, Michigan and Oregon. The greatest decrease was in Pennsylvania, whose output

The Making of a New Corn Belt

PROGRESS IN THE SOUTH WHICH INSURES A BROADER FOUNDATION FOR ALL INDUSTRY.

By E. E. MILLER, Cleveland, Tenn.

As ancient Israel once cried, "Peace, peace," when there was no peace, so we of America often cry, "Progress, progress," when there has been no progress.

Take corn raising, for example. Despite the greatly-increased total crop and despite all the improvements in machinery and methods of culture, all the progress made in seed selection and a greatly-increased use of commercial fertilizers, the average acre of corn in the United States yields no more bushels than did the average acre of 40 years ago. Here are the figures:

In the 10-year period, 1870-1879, the average yield of corn per acre was 27.1 bushels; the next decade (1880-1889) it was 24.1 bushels; it was the same for the next 10-year period. For the decade 1900-1909 it was 25.8 bushels; for 1910 it was 27.7 bushels; for 1911, 23.9 bushels; for 1912, 29.2 bushels; for 1913, 23.1 bushels; for 1914, 25.8 bushels.

Not so much progress, after all, it would seem.

The explanation is simple. Better farming is done now, taking the country as a whole, than 40 years ago; but the fertility of the soil has been so decreased by continued bad farming that the average yield of corn has remained practically the same.

Some States show a substantial increase in recent years which promises to be permanent—Pennsylvania, for example; others are just about holding their own—Illinois is in this class; still others—Kansas for one—are making smaller crops on the average in recent years than they made 30 or 40 years ago. Pioneer farming, the mining of the soil, still persists in most sections.

Notable progress in corn culture has been made in one section within the last 10 years. The cotton country is just finding out that it can raise corn profitably and get respectable yields. Leaving out the border States of Virginia, Tennessee and Arkansas, always more corn than cotton States, and also Texas, which is in many ways a country and a law unto itself, we find the following record made in corn growing by the cotton country:

AVERAGE YIELD PER ACRE—BUSHELS.

	1870-1879	1880-1889	1890-1899	1900-1909	1910	1911	1912	1913	1914
N. C.	14.7	12.2	13.0	14.8	18.6	18.4	18.2	19.5	20.3
S. C.	9.4	9.4	9.9	11.6	18.5	18.2	17.9	19.5	18.5
Ga.	11.2	10.4	11.1	11.5	14.5	16.0	13.8	15.5	14.0
Fla.	10.2	9.6	9.7	10.2	13.0	14.6	13.0	15.0	16.0
Ala.	13.9	12.6	12.8	13.5	18.0	18.0	17.2	17.3	17.0
Miss.	15.4	14.3	15.0	15.2	20.5	19.0	18.3	20.0	18.5
La.	17.2	16.0	16.3	17.5	23.6	18.5	18.0	22.0	19.3

A marked increase in the average yields of a State or a section for one or two years usually means little except that the seasons have been better than usual. Illinois made 40 bushels of corn to the acre in 1912, but only 27 bushels the next year and 29 in 1914. Pennsylvania's average yield, on the contrary, has fallen below 40 bushels—39 in 1913—only once in the last five years, and has shown an increase for each 10-year period since 1870. That means better farming, a permanent increase in crop yields, real progress. The recent figures for the Southeastern States indicate a like real and steady advance. It is altogether unlikely that Georgia and South Carolina will go back to average yields of 11 or 12 bushels. They might for one very unfavorable year, but such a slump would be temporary. Farmers in the cotton country have learned more about growing corn and practice better methods than formerly.

Additional evidence of this is found in the fact that acreage has been increasing right along with acre yields. The following table shows, in thousands of acres, the area planted to corn for the past six years:

	1909	1910	1911	1912	1913	1914
North Carolina...	2,459	2,650	2,700	2,808	2,835	2,835
South Carolina...	1,566	1,707	1,790	1,915	1,975	1,975
Georgia	3,383	3,585	3,692	3,910	4,066	4,000
Florida	606	680	636	655	675	700
Alabama	2,573	2,590	3,000	3,150	3,254	3,200
Mississippi	2,172	2,590	2,850	3,106	3,150	3,150
Louisiana	1,591	1,782	1,800	1,905	1,900	2,000
Total	14,454	15,794	16,468	17,349	17,865	17,860

The first check in the steady increase of both acreage and average yields occurred last year. Last year was cotton year in the South. The old cotton craze, which has come periodically for a generation, swept over the

farmers once more last year, halted their advance toward better farming and carried them back a little. It is safe to say, however, that a repetition of the experiences of 1914 is not desired, and that it will be some years before another such rush into cotton need be looked for. A larger corn acreage and better yields of corn have both come to stay in the South.

Here, then, a corn-growing country has been made within the last few years. To add 25 to 50 per cent. to the average yields of a staple crop and along with this to increase the acreage more than one-fifth within five years is no little accomplishment for any farming section. It makes one wonder as to how it has been done.

A number of agencies have been at work in the South to bring about this change. The best cotton farmers have made it a rule for a long time to grow what corn they needed for their own use. Nearly all farmers have grown some. The corn crop has been regarded as a thing of minor importance, however; it has been "supplies," a money saver, but not a money maker, and cotton has been given first place and best chance.

The boll-weevil changed this in some sections. Louisiana farmers found that they could not grow cotton and turned to other crops, of which corn was one. Soon they were boasting that the State would have corn to sell instead of having to buy, as formerly. Wherever the boll-weevil has gone the interest in corn has increased. It has been planted largely as a "substitute crop," it is true, and as the farmers have learned how to raise cotton in spite of the boll-weevil, they have been inclined to go back to cotton. Still, when a farmer has grown all the corn he needs for two or three years, he does not like to go back to buying, and this is especially true if he has at the same time learned how to grow 18 or 20 bushels to the acre instead of 12 or 15.

About the time the boll-weevil was scaring farmers worst in the Southwest the farm demonstration work was started in the Atlantic Coast States. It spread even more rapidly than did the boll-weevil, and by showing the farmers how they could increase their corn yields and decrease the cost of production per bushel by better preparation and cultivation it did wonders in creating a new interest in corn growing. Farmers read how one man or another had produced 50 bushels or 60 on an acre at a cost of 10 or 15 cents a bushel, and were at once inspired to try what they could do.

Along with this demonstration work, and as part of it, came the boys' corn clubs. Reports of almost unbelievable yields of corn began to go over the country. The boys who made these 100-bushel and 200-bushel crops became popular heroes, and their big yields were contrasted with the very small yields of their fathers, greatly to the depreciation of the old men. The South was proclaimed the real corn belt, the place where the most corn could be made on an acre, and renewed emphasis was placed on the benefits that would come to the Southern farmer when he moved his corn crib from the Northwest to his own barnyard.

There was a lot of exaggeration in much of the talk of this time, and much unadulterated nonsense was turned loose in the papers and from the platforms, but the indisputable facts could not fail to impress every thinking farmer. Some of the big yields reported were all too carelessly measured, and many of them were made at undue expense and by methods a most practical farmer could not afford to follow, but there could be no question that more very large yields of corn were made by these Southern boys than had ever been made anywhere else or by any other farmers. The cotton country was definitely on the map as a corn-growing country. Everyone knew that big crops of corn could be made in the South, and that they could be made at reasonable cost.

That is just about the present state of things. The South is not yet to be regarded as part of the corn belt, but it is coming to be a very important part of it. The increasing interest in livestock husbandry and the increasing realization of the fact that profits from cotton come from a restricted acreage well cultivated will in-

sure a continued increase in the acreage planted to corn, while appreciation of the fact that no man can make money growing such small crops of corn as most Southern farmers have been used to grow will keep farmers eager to increase their yields by the improvement of their methods and their soils.

Indeed, the one word "soils" tells why the South is not in the corn belt actually as well as potentially. Most Southern soils are not rich naturally in either plant foods or organic matter, and long-continued cropping has reduced the supply of both—especially of vegetable matter or humus—to such a point that big corn crops are impossible until something has been done for the land. Once Southern soils are stuffed with organic matter, the South will be a very real part of the corn belt. The sowing of more grass and more legumes is just as necessary to make the cotton country a great corn section as is the planting of more corn. That Southern farmers are taking more interest in these crops within recent years, planting them more extensively and feeding more of them to livestock, is one great reason for the increase made in the average yields of corn in the last decade.

A MERE YOUTH AT 500.

Big Trees of California Have Been Standing Since the Trojan War.

The amazing age of sequoia trees is impressively referred to in a bulletin on "Our National Parks," just issued by the Department of the Interior. The sequoias are the oldest living things in this world, the bulletin states, and then quotes from Ellsworth Huntington to this bewildering effect:

"A tree that has lived 500 years is still in its early youth; one that has rounded out 1000 summers and winters is only in full maturity, and old age, the three-score years and ten of the sequoias, does not come for seventeen or eighteen centuries.

"How old the oldest trees may be is not yet certain, but I have counted the rings of 79 that were over 2000 years of age, of three that were over 3000, and of one that was 3150.

"In the days of the Trojan War and of the exodus of the Hebrews from Egypt this oldest tree was a sturdy sapling, with stiff, prickly foliage like that of a cedar, but far more compressed. It was doubtless a graceful, sharply conical tree, 20 or 30 feet high, with dense, horizontal branches, the lower ones of which swept the ground. Like the young trees of today, the ancient sequoia and the clump of trees of similar age which grew close to it must have been a charming adornment of the landscape. By the time of Marathon the trees had lost the hard, sharp lines of youth, and were thoroughly mature. The lower branches had disappeared, up to a height of 100 feet or more; the giant trunks were disclosed as bare, reddish columns covered with soft bark six inches or a foot in thickness; the upper branches had acquired a slightly drooping aspect, and the spiny foliage, far removed from the ground, had assumed a graceful, rounded appearance. Then for centuries, through the days of Rome, the Dark Ages, and all the period of the growth of European civilization, the ancient giants preserved the same appearance, strong and solid, but with a strangely attractive, approachable quality."

The bulletin is devoted particularly to the Sequoia National Park, which, although 24 years old, is, as pointed out, scarcely known east of the Rocky Mountains. Yet the park has an area of 161,597 acres. People generally associate ideas of the California big trees with the Mariposa Grove near the Yosemite, and yet it appears from the bulletin that there are in the Sequoia National Park 1,166,000 trees, 12,100 of which exceed 10 feet in diameter.

Some idea of the immensity of one of these big trees can be gathered from the statement that "Three thousand fenceposts, sufficient to support a wire fence around 8000 or 9000 acres, have been made from one of these giants, and that was only the first step toward using its huge carcass. Six hundred and fifty thousand shingles, enough to cover the roofs of 70 or 80 houses, formed the second item of its product. Finally, there still remained hundreds of cords of firewood which no one could use because of the prohibitive expense of hauling the wood out of the mountains."

Finley Yard at Birmingham; Southern Railway's Terminal

Three important features of the Finley yard, the first unit of which was recently completed at North Birmingham, Ala., by the Southern Railway Co. at a cost of \$661,000, are shown in the accompanying illustrations, which afford an excellent idea of the magnitude of this notable improvement in the Birmingham property of the system. Previously the freight-handling facilities consisted of four yards scattered over about 10 miles, and to improve them would have cost heavily, so it was decided to plan a yard layout considering probable needs

with a specially designed device which automatically prevents a weight being recorded when more than one car is on the scale. The live and approach rails are connected by Bohannon-Dugger improved flexible easer joints. Another special feature is an interlocking device for the switch at the upper end of the scale, the effect of which is to place responsibility for the operation of the scale upon one person. The scalehouse is shaped so as to give improved line of vision.

The classification yard has 16 tracks, with a capacity



CINDER PITS, CRANEWAYS, GRAB BUCKETS AND COALING STATION.

for 25 years and to add to it as requirements demanded.

The part of the yard now finished and in use consists of a receiving yard, a gravity classification yard, a storage yard and repair tracks having a total capacity of about 2000 cars, a roundhouse and connecting buildings, a yard office, water supply, coal, cinder and sand handling plants, two sewage-treating plants, lighting and air facilities. Grading for these comprised about 105,000 cubic yards of earth and 1600 cubic yards of rock excavation, cuts and fills equalizing, excepting for 20,000 cubic yards of borrow from the site of the future extension of the yard. Drainage is obtained by means of catch-basins, inlets and sewers of terra-cotta, cast-iron and reinforced-concrete pipe from 12 to 48 inches in diameter.

In the receiving yard are eight tracks of 45 cars capacity each, and two running tracks. After running level for half its length the yard rises on a grade of 0.5 per cent. toward the hump, the latter being adjusted to meet the local conditions. Beneath the hump is a concrete underpass for the use of employees. The track scale is of the suspension-bearing type, 150 tons capacity, four sections 50 feet long, with a live weighing surface of 50 feet and equipped with full capacity 400 multiple beam, with automatic weight recorder connected

of 47 cars each and with two running tracks. The grade is 0.25 per cent. excepting for a few hundred feet at the extreme west end, which is 0.8 per cent. to coin-



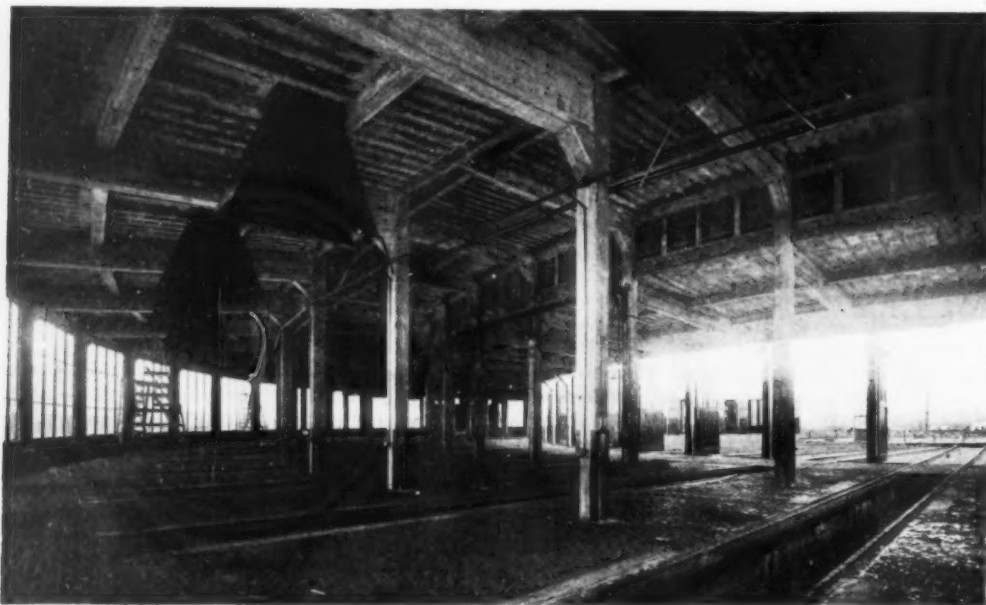
FINLEY CLASSIFICATION YARD, LOOKING EAST.

cide with the grade of the main tracks. There are also five caboose tracks for 173 cabs, two repair tracks of

74 cars capacity, 10 local freight and storage tracks of 53 cars capacity each, and a six-track coal-storage yard of 25 cars capacity. The latter tracks are on a 1 per cent. descending grade toward the coal hopper, which the cars reach by gravity. Coal and cinder pit tracks are arranged to enable engines to take coal and water and deposit cinders with minimum loss of time. There are four concrete cinder pits 160 feet long in pairs, each pair being equipped with an electric overhead traveling crane, provided with a Brown hoist grab bucket of 15 yards capacity. The coal-handling plant is in the center of the yard between the cinder pits and the roundhouse. It has a reinforced concrete coal-storage pocket with an overhead capacity of 1000 tons, of which 60 tons are held in four 15-ton scale pockets. Coal is unloaded from hopper bottom cars into a hopper and carried to the top of the pocket by a motor-driven chain and bucket type elevator. This is accomplished at the rate of about 100 tons per hour. The scale pockets are filled by gravity from the overhead pocket. The amount of coal taken by each locomotive is measured by scales with registering beams.

Adjoining the coaling station is a reinforced concrete sand storage and drying building with a capacity of 100 cubic yards of wet sand. This material is unloaded from cars direct to a hopper and then conveyed to the storage pocket by a motor-driven belt and bucket elevator. Three stove dryers immediately beneath the pocket receive sand by gravity, and when dried it goes from the dryers by means of a steel drum and compressed air to a storage tank for delivery thence by gravity to each of the four coaling tracks. It is dried at the rate of about one ton per hour.

The roundhouse has 25 stalls, and is 92 feet wide. It is built of reinforced concrete, with tar and gravel roof on concrete and hollow tile slab. Windows are of wire glass and metal sash. There is a motor-operated turntable 90 feet long. Adjacent is a wash and locker-room in a brick building 23x63 feet. The yard office is of



INTERIOR OF ROUNDHOUSE.

frame, with tile roof. Its dimensions are 25x56 feet.

Water for the terminal is to be furnished by the local water company, but the railway provides all pipes on its property and two water-storage tanks, one of 96,000 gallons and the other of 48,000 gallons capacity.

Elaborate airbrake testing facilities are installed, so that each train may be tested as made up. The compressor for this supplies air for the roundhouse.

The entire yard is lighted by 130 series nitrogen lamps of 400 candle-power, 6.6 ampere, which are so located as to afford adequate light at all points. In the buildings, and especially in the roundhouse, the lighting had particular attention. One hundred watt Mazda lamps, with enameled steel reflectors, are used. Current is purchased.

Forks, Spoons and Shoe-Nails.

Panos C. Papageorgacopoulos, 77 Kolocotroni street, Piraeus, Greece:

"I desire to enter into negotiations with manufacturers dealing in spoons, forks and shoe-nails, of which I am sending you samples. Kindly give this matter your immediate attention and recommend me some of the best manufacturers, advising them to communicate at once and send me samples of their products. Should you recommend me some good manufacturers I shall be able to do much business, as at present there is a great scarcity here of these articles."

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

SEABOARD'S NEW EXTENSION.

Expected to Complete Charleston Southern in About a Year.

Labor and materials are being assembled for the construction of the Charleston Southern Railroad, 85 miles long from Charleston, S. C., to Savannah, Ga., which will begin immediately. The route will be via Dale, Grays Hill and Pritchardville. From Grays Hill a six-mile branch will be built to Beaufort, S. C. W. R. Bonsal of Hamlet, N. C., and Charleston, who built the Charleston Northern, as well as the other new lines of the Seaboard Air Line in South Carolina, will have general charge of the work.

It is notable that 97 per cent. of the route is straight; that the maximum grade is but three-tenths of 1 per cent., and that a total of only 4½ miles of trestle and bridge work will be required in constructing the entire extension. Between 60 and 70 per cent. of the right of way has been obtained, and the rest will be secured soon, according to a report from Savannah, which quotes one of the leading officials of the Seaboard, W. L. Seddon, assistant to the president. The character of work on the line will be heavy and up to date for fast trains, and the most powerful engines. It is expected that little more than a year's time will be needed to finish the road ready for operation.

On this new route to Savannah there will be five or six important river crossings, and, as in the case of building the Charleston Northern, the streams will be used to convey materials to the contractors, who will have their respective camps established on the necks of land between the waterways. This method of using vessels to get ties, rails, etc., to the road will materially facilitate the task of construction, as it did on the other line, which was completed some months ago. It will be particularly valuable in the case of work on the bridges and trestles.

Southern Railway's Earnings.

The Southern Railway Co. has issued a statement of the results of operation for July, comparisons being made with the same month of last year. These figures are exclusive of interest, rentals and other income charges. Gross revenue was \$5,211,635, decrease \$493,484, or 8.65 per cent.; operating expenses, taxes and uncollectible railway revenue \$3,893,988, decrease \$641,659, or 14.15 per cent.; operating income \$1,317,647, increase \$148,175, or 12.67 per cent. In addition to the operating expenses, the company spent during July for improvements to its roadway and structures \$470,501.97, an increase of \$178,809.35.

The operating income, as here shown, represents the amount remaining after the payment of only those expenses incurred in the actual operation of the railway and of taxes, but takes no account of the charges for hire of equipment, rental of leased lines, terminals and other facilities, and interest on funded debt (bonds), all of which costs are charged against operating income.

Big Bridge Over the Ohio River.

The large railroad bridge under construction over the Ohio River at Metropolis, Ill., to make a direct connection between the Chicago, Burlington & Quincy Railroad and the Nashville, Chattanooga & St. Louis Railway through the Paducah & Illinois Railroad, just opened for traffic, will be one of the most remarkable structures of its kind. It will be 5700 feet long and 317 feet high, the latter measurement being from the foundation of the main channel pier, 75 feet below the river bed, to the top of the channel span. Thus the bridge will be 242 feet high from the bed of the stream to the top. The floor will be 53 feet above high water. It will require 19,000 tons of steel in its construction, and the channel span will be 720 feet long, which is notable for size. To build the piers and pedestals for the steel work of the approaches of the bridge will de-

mand the use of 90,000 cubic yards of concrete. The machinery employed in its erection is described as being most complete. Caissons for two of the piers have already been sunk, and work is proceeding night and day. It will take three years to finish the bridge.

Inclines to permit the use of railroad transfer boats have been built by the Nashville, Chattanooga & St. Louis Railway and the Chicago, Burlington & Quincy Railway, which form the Paducah & Illinois Railroad Co., and traffic will be conducted by means of these vessels until the bridge is placed in service. Five trunk lines will eventually use the bridge. The new route, it is expected, will open and develop a good railroad business between the Northwest and the Southern States.

Interurban and Power Development Around Wichita, Kans.

Arkansas City, Kans., August 23—[Special].—The Kansas Gas & Electric Co. has purchased the Arkansas City electric-light plant, the local water-power plant and the canal of the Arkansas City Water Power Co. and the Arkansas City Gas & Electric Co., capitalized at \$50,000 and \$100,000, respectively. The purchase covers a canal five miles in length, with the necessary dams, gates and water-power plant, having a capacity of 1500 horse-power developed; a steam plant of 1000 horse-power and the electric-lighting service and equipment for Arkansas City. The purchasing company, the Kansas Gas & Electric Co., supplies without competition gas, electric light, power and the steam heat to Wichita, Kans.; gas and electric light and power to Frontinac, Pittsburg, Independence, Sedgwick, Valley-Center, Halstead, Cherryvale, Cherokee and Newton, Kans. The company also has a contract with the Interurban Railway Co. for all power necessary to operate the interurban railway line within the five counties of the State in which it now operates. These lines at present extend north from Wichita, and will be extended south to this city, giving a total of 90 miles of trackage. The company also has the transmission line between Independence and Cherryvale, and is supplying under contract all power used for operating the street electric railway lines in Wichita. It has the total of 285 miles of electric distributing lines and 175 miles of gas mains. The capitalization of the purchasing company is \$1,500,000 authorized and issued, and the annual statement made in June, 1914, shows a surplus of earnings over operating expenses of \$223,818.

A. L. Newman will continue as resident manager of the new company. C. B. DOUGLAS.

New Equipment, Etc.

Nashville, Chattanooga & St. Louis Railway is reported to have ordered 200 freight cars from the American Car & Foundry Co., St. Louis.

Western Maryland Railway is reported getting prices on 500 tons of bridge steel.

Gulf, Florida & Alabama Railway's order for 6000 tons of 80-pound rails was placed with H. F. Wardwell of Chicago.

Chicago, Burlington & Quincy Railroad has ordered a rotary snow plow from the American Locomotive Co., New York.

Cumberland Traction Co., Elizabethtown, Ky., is in the market for second-hand rails.

Railroad Notes.

Alexander Robertson, vice-president of the Missouri Pacific Railway, has been appointed chief operating official for the receiver, B. F. Bush.

The report of the Central of Georgia Railway to the Interstate Commerce Commission, covering its fiscal year ended June 30, is published, showing total operating revenues \$12,108,184, decrease as compared with the preceding year \$2,218,390; total operating expenses \$8,973,511, decrease \$1,812,252; operating income \$2,547,633, decrease \$361,581.

The Western Maryland Railway Co.'s statement for July shows revenues \$833,177.07, increase as compared with the same month of last year \$120,747.77; expenses \$550,976.96, increase \$29,474.15; net revenues \$282,200.11, increase \$91,273.62; operating income after taxes \$255,200.11, increase \$88,773.62.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

To Manufacture Cotton Cordage.

The Highland Cordage Co., Hickory, N. C., has been organized and will construct a two-story 100x75-foot building to be equipped with machinery for manufacturing cotton twine, sashweight cords, clotheslines, etc. It was recently mentioned as having been incorporated, and now has an authorized capital stock of \$125,000. Charles H. Geitner is president, and A. A. Shuford, Jr., is secretary-treasurer.

Falls Manufacturing Co.

Organization has been effected by the Falls Manufacturing Co., recently mentioned as to build a cotton-yarn mill at Granite Falls, N. C. Plans and specifications are now being prepared, a 5000-spindle installation having been decided upon. Officers have been elected as follows: J. D. Elliott, president; L. T. Sharp, vice-president; D. H. Warlick, secretary-treasurer.

Valley Cotton Mills.

The Valley Cotton Mills, Shelbyville, Tenn., has been organized with \$50,000 capital by W. J. McGill and others to build a cotton factory. This mill is to be driven by electricity from the transmission system of the Chattanooga Tennessee River Power Co., Chattanooga, Tenn., which will add to its facilities by building a hydro-electric plant on Duck River near Shelbyville.

Textile Notes.

Victoria Cotton Mills, Rock Hill, S. C., will add 82 new looms, and this machinery has been purchased.

P. H. Hanes Knitting Co., Winston-Salem, N. C., has plans and specifications by Hook & Rogers, Charlotte, for its additional spinning mill and other buildings, for which contract has been awarded to the Travers-Wood Company of Richmond, Va. The mill building will be two stories high, with basement, 346x127 feet, of mill construction.

A CHANCE FOR FINDING OIL IN MISSISSIPPI.

United States Geological Survey Suggests Region for "Wildcatting" Near Vicksburg.

The people of Mississippi have long thought and many of them are fully convinced that the oil pools of the Gulf Coastal Plain are not confined to Louisiana, Texas or Southeastern Arkansas, but that there must be pools farther east in this belt of country. It seems that the United States Geological Survey also has held a similar view, and in evidence of its hopefulness it has been examining an area in the Vicksburg region in a search for geologic structure regarded generally as favorable, other things being equal, for the occurrence of oil and gas.

Director George Otis Smith, who now gives out information in order to advise the drillers as to comparatively promising points at which to do wildcatting, makes plain the fact that while the general geologic conditions, so far as they can be detected from surface evidence, which is very scarce in this area, are of the kind attending oil and gas pools. There are other invisible conditions not to be detracted at the surface of the earth that may make the somewhat favorable geologic structure discovered by the survey barren of oil, after all. Hence, while he is disposed to encourage drilling, he wishes it understood that such test drilling will be nevertheless in the "wildcat" class.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Asphalt Paving, Arsenal Equipment, Etc.

G. F. Tsatsos, Rue de Thermes, Athens, Greece:

"On paving the streets of Athens, here are particulars that may point a way of putting me in communication with houses that would take hold. The municipality awarded contract for asphalt paving its streets for five years to Neuschateler Asphalt Co. This contract is about to expire. The company so far has paved with asphalt 150,000 square meters; asphalt 5 per cent., with mixture of cement 8 per cent., compressed. The price per meter square was 15¼ francs, with guarantee for five years. Paving almost immediately necessary will embrace 50,000 square meters, but is only a portion of work that will have to be done. The work may be three-fold more. The city will be disposed to give to the same company that does the asphalt work the paving of streets according to the Tare macadam principle. There will be about 200,000 square meters of that kind of work, and this may be greatly magnified. In some cases a superficial coating of the road will be carried out or made. There will certainly be a large number of estimates. The company doing 2000 or 3000 square meters as a sample will have an enormous advantage.

"In the near future the admiralty of Greece will have need of machines, tools and equipments to complete the arsenal at Salaminae. Some new shops have already been constructed, and, without being able to speak positively, I want to say that the machines and tools necessary will be adopted and approved if they have already found favor in the arsenals and workshops of your country."

Cereals, Rubber Shoes, Heel Taps, Etc.

Bensussan, Sides & Co., Salonique, Greece:

"Do us the favor of getting American firms to communicate with us directly and send us prices and samples of iron heel taps, for boots and shoes, with square holes in them, together with the nails, of best quality Nos. 1-25, in packages of one dozen each and these packages in cases. The goods to be delivered promptly at Salonique, cost, insurance and freight paid and the risk of war also provided for, no charge to be made for packing. Payment will be made in cash with a discount of 5 per cent. as soon as the shipping documents are received. Also American manufacturers to quote prices directly and without delay and send samples of rubber shoes. We have very heavy orders for goods in that line. Also for American firms to cable prices on cereals, especially spring and winter wheat and other grains. We have some very large orders for supplies of that kind. We hope to receive these orders by telegraph, and we will appreciate it very much if we get them."

Machinery for Spanish Trade.

D. Beya & Co., Barcelona, Spain:

"Aid us in our work of importing machinery, made in your country, into Spain. We are already buying from different American firms. We are prepared to pay immediately upon receipt of shipping documents, and we travel frequently throughout Spain, according to the kind of machinery that we are engaged in selling, and we fortify our efforts in that direction by articles in the paper, advertisements and circulars sent direct to customers. We are interested in every kind of machinery useful in manufactures, and at present we have exclusive sale for certain machinery used in making soap, stone crushers, flour mills, etc., and we would be pleased to receive estimates at any time on machinery for making chocolates and candies, building machinery, such as elevators for contractors and architects; in fact, all kinds of machinery that is useful in public building work of any kind. We are agents for Ransome Machinery Co. of Dunnellen, which makes cement and mortar grinders. We are also interested in importing

rails for steam railways and their accessories, such as passenger and other cars, installations for mines and material for mining work."

American Products for Bulgaria.

George Koitcheff, Sofia, Bulgaria:

"I get your RECORD every week and follow every novelty that might meet with success in our country. I will be obliged to cease the manufacture of shirting, capots, etc., for it is next to impossible to import any kind of merchandise. I have decided to act as representing agent, buying and selling, on my own responsibility, various machines and merchandise of American origin. Goods from England, France, Germany, Italy, Russia and Austria are generally sold to people in Bulgaria on a credit, for foreign manufacturers and dealers have confidence in our commercial reliability. After the war I shall make trips through Bulgaria in the interest of American firms. In writing to American firms who are willing to confide me their agency I ask them to not indulge in useless correspondence."

Argentine Opportunities.

Furio Viola & Co., commission merchants, Buenos Aires, Argentina:

"The present time is favorable for your republic to do business here, although conditions are not normal. You could readily sell goods here if you give limited credit and not insist on payment upon receipt of documents. I take the liberty of enclosing a list of the articles which interest us. Cotton and hessian bags for corn, sugar, coffee, etc.; hemp packing cork; glue for industry; leathers for shoes; cotton clothes; silk and cotton hosiery; chemical products and drugs; soaps and candles; rice; bacon; cotton oil; dried fruits; California fresh fruits; canned vegetables; canned salmon and sardines."

France Wants American Manufactures.

Anglo-French Commission Agency, Ch. Funget, 29 Rue de Mogador, Paris, France:

"We are much interested in American products, especially the following: Small machinery and machine tools; woodworking machinery; tools of all kinds; ironmongery; hardware; enameled wire, articles for electrical purposes; patented articles; any kind of specialties; all articles of any description mostly made in Germany previous to the war."

Files, Saws, Horses, Bullocks, Etc.

Edgar Franklin & Co., 62 Basinghall street, London, E. C., England:

"We would be willing to offer a share of our commission to anyone able to assist us in getting offers for 2500 horses and bullocks, if 40,000 are found too difficult to supply, weighing from 1100 to 1200 pounds. We could do with a good number if offered prices c. i. f. Bordeaux and Nantes are acceptable. We could handle files, saws, etc., for Russia, our own factories being too busy with Government orders. Want addresses of makers of mirrors for searchlights. Kindly put us in touch with firms able to export this: Ends after raw cotton for spinning has been withdrawn and what remains; analysis should be ash .5 per cent., dust 2 per cent., chlorine .02 per cent., ether .75 per cent. and moisture must not exceed 10 per cent. Can do with from 4,000,000 to 15,000,000 pounds as a start, if price is right."

Marine Motors, Hardware, Etc.

Newman Company, Tongoa, New Hebrides, Australasia:

"There is a good business to be done here, and no time like the present for working up a new connection for selling produce. Our object is to find some firm prepared to buy copra. Copra is dried cocoanuts. It is made either by drying it in the sun or in ovens, when it retains its whiteness and is more valuable; or it is what is called locally 'cooked' over a fire, the nuts being

split in two and laid on a bed underneath which a fire is made; this is called smoke-dried. The uses to which copra is put are many, principally oil, soap, grease, glycerine, butter, etc. Even the refuse, after careful manipulation, turned into oilcake, sold at \$12 per ton some time ago, and is invaluable as a cattle fodder. The future of the Hebrides will greatly depend upon the development of its commerce, and we are sure that were some American firm to start, others would follow. We do not mind buying for more than one firm, but we prefer to have a solid connection. Once we could get into touch with principals, we are prepared to do our best for them at a reasonable return. There would also be a market for American goods in soft goods; also ironmongery and groceries. Machinery is not wanted so much, except small motors for cutters and launches."

Wants Phosphor-Bronze Gauze.

W. H. J. van der Toorn, care of Market & Hamacher, 193 West street, New York:

"The undersigned has arrived in New York to make purchases for export to Java on behalf of sugar-cane mills in that territory. Give us addresses of makers of fine mesh phosphor-bronze gauze of Nos. 150, 130 and 120 mesh. From the No. 150 mesh phosphor bronze gauze I want about 167 meters of one meter width or broad, woven edges, and from the No. 120 mesh gauze about 70 meters, one meter broad, ditto. Formerly this fine mesh gauze only was made in Germany, France and Belgium."

Burlap and Bags.

Abram de Sola, Curacao, D. W. I.:

"As at present it is very difficult to receive first and second-hand bags from England, and as I have a regular number of first-class importers who used to import these bags, I avail of this to request you to please put me in touch with first-class dealers in this line, as also in burlaps by pieces. Bags imported from Dundee and Liverpool are the following: Devidevi bags with capacity for 50 kilos salt; bags called Calentta bag to carry 65 kilos; salt bags made of good quality burlaps to carry 50 kilos fine salt; coffee bags to carry 62½, 90 and 100 kilos. Burlaps in pieces of 40 yards and of the following grades: 8, 8½, 9, 9½, 10 and 10½ ounces."

For Bulgarian Trade.

Leon H. Bassan, Sofia, Bulgaria:

"I will be happy to act as agent for any of your manufacturers who wish to push business in Bulgaria. My firm is well placed, and stands good in the market, and for that reason I am careful not to enter into business relations save with firms that stand well in the export trade. I will take the agency for every kind of agricultural implement as well as other articles of commerce. It is understood that the only American goods which would be in demand here are the ones that can compete in price with others in our market."

Benzol and Sheet-Iron Plates.

Francois Rallion, Pointe-a-Pitre, Guadeloupe:

"Galvanized corrugated sheet-iron plates interest me, and I would be happy to receive estimates on them from manufacturers who are well placed and able to deliver the goods, and who wish to make a market for themselves in this country. I can do a good business in benzol if the people who make this goods will communicate with me and give me their prices and send me samples. I can do a good business, as we are putting it to use in place of gasoline in the automobile industry."

Webbing and Wire Springs.

British Coathanger Manufacturing Co., Ltd., Rockingham street, London, S. E., England:

"Give us a few names of firms who make wire springs, such as upholsterers use here in England, and for some webbing, sample enclosed. We are large buyers of this class of goods, and could place large orders or contracts for them."

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Details in regard to road and street undertakings and bond issues, briefly mentioned below, are given under the proper headings in our "Construction Department" and "New Securities," published elsewhere in this issue.

Bonds Voted.

Angler, N. C.—Black River township voted \$25,000 bonds for constructing roads.

Hinton, W. Va.—Summer county, Greenbrier district, voted \$150,000 bonds for road construction.

Hinton, W. Va.—Summers county, Talcott district, voted \$100,000 road-construction bonds.

Ingleside, Tex.—Aransas County Road District No. 3 voted \$75,000 bonds for road construction.

Lake Charles, La.—Grand Lake Ward, Cameron parish, voted \$36,000 bonds for road construction.

Mansfield, Mo.—City voted \$15,000 bonds for road construction.

Seymour, Mo.—City voted \$30,000 bonds for road construction.

West, Tex.—City issued \$12,500 bonds for streets.

Winnfield, La.—Winn parish voted \$50,000 bonds to construct and maintain roads.

Bonds to Be Voted.

Columbia, Ky.—Adair county ordered election September 11 on \$25,000 bonds for road construction.

Eustis, Fla.—City votes October 5 on \$40,000 bonds for street paving.

Farmville, N. C.—Pitt county, Farmville township, votes September 21 on \$50,000 bonds for road improvements.

Sanford, Fla.—Seminole county ordered election September 6 to vote on \$250,000 bonds for hard surfacing 35 miles of road.

Sweetwater, Tenn.—City votes September 30 on street-improvement bonds for \$5000.

Contracts Awarded.

Baton Rouge, La.—Police Jury awarded contract to build 28 miles of road; cost about \$20,000.

Houston, Tex.—City awarded \$6412 contract for road improvements.

Kansas City, Mo.—City awarded \$4027 contract for street improvements.

Kansas City, Mo.—City awarded \$11,895 contract for street improvements.

Joplin, Mo.—City awarded \$8206 contract to construct concrete pavement.

Kinston, N. C.—City awarded contract for 20,000 square yards of sheet asphalt.

Lufkin, Tex.—City awarded contract for additional paving; four blocks of streets.

Madisonville, Ky.—Hopkins county awarded contract for one mile of macadam road construction to cost \$5400.

Paducah, Ky.—McCracken county awarded \$2781.46 contract for road construction.

Port Allen, La.—West Baton Rouge parish, Road District No. 1, awarded \$37,735 contract to construct 27 miles of road.

Sedalia, Mo.—Pettis county, Sedalia Twelve-Mile Special Road District, awarded contract for topdressing rock road; 2½ miles; \$3500 available.

Welch, W. Va.—Sam G. Walker & Co. have contract to build 34 miles of roads.

West Asheville, N. C.—City awarded contract to construct 9000 feet of sidewalks.

Contracts to Be Awarded.

Alta Vista, Va.—State receives bids until September 4 to build 9½ miles of macadam road.

Asheville, N. C.—City received bids until August 28 for 1200 square yards of concrete street paving.

Baltimore, Md.—City receives bids until September

8 to construct 2700 square yards of sheet asphalt paving.

Charleston, W. Va.—City receives bids until September 7 to pave certain streets and alleys; about 34,000 square yards.

Denton, Md.—Caroline county receives bids until September 21 to build 2.03 miles of road.

Eastville, Va.—Eastville District Road Board of Northampton County will build 55 miles of sand-clay roads.

Hickory, N. C.—City will construct 3000 yards of concrete sidewalk.

Hodgenville, Ky.—La Rue county will construct water-bound macadam road to cost \$7200.

Linwood, Ala.—Marengo county will expend \$60,000 for road construction.

Middleburg, Va.—Loudoun county receives bids until September 3 to construct four miles of macadam road.

Natchitoches, La.—Natchitoches parish, Ward 9, voted \$50,000 tax to construct 12 miles of gravel road.

Newbern, N. C.—Craven county will construct 20 miles of gravel, bituminous-surfaced roads.

Newland, N. C.—Avery county will construct 35 miles of macadam road; \$150,000 available.

New Orleans, La.—State receives bids until September 8 to construct 8.1 miles of earth highway in Red River parish.

Nicholasville, Ky.—Jessamine county will build 1½ miles of turnpike.

Raleigh, N. C.—City will expend \$10,000 for sidewalk construction.

Tampa, Fla.—City receives bids until September 7 to construct 100,000 square yards of street pavement on various streets; vitrified brick, asphalt blocks, asphaltic concrete and cement concrete.

Taylor, Tex.—City will contract for 120,000 square yards of paving.

Webster Groves, Mo.—United Railways Traction Co. will improve portion of Lakewood avenue; reported to cost \$80,000.

Whitesburg, Ky.—Letcher county lets contract September 7 for constructing four miles of model roadway.

Nucleus of a Highway System Proposed for Georgia.

Evidencing the road-building spirit that has taken hold of the people of the South, the Georgia Chamber of Commerce is planning the establishment of 12 automobile highways, leading out of the city of Macon and penetrating to every section of the State to the border lines. The selection of these 12 highways will be left to the good-roads committee of the Georgia Chamber of Commerce. An opportunity will be given all representatives of contesting routes to present their claims at a meeting to be held in Macon on the 29th and 30th of September, and the routes will be designated as soon after the meeting as inspection runs can be made over the various routes represented at this meeting.

Each link of the system of 12 routes will be known as a "Georgia State Highway." It will be so marked with the usual signboards, and a booklet showing all the routes will be issued and distributed among automobilists and kept at convenient places as a guide for tourists. It is hoped that within a few years at most the routes will have been put in such condition that when the Georgia Legislature creates a Georgia Highway Commission this system of highways can be tendered to the commission as the beginning of a complete network of highways throughout Georgia.

Unique Campaign for Good Roads Started in Oklahoma.

The citizens of Muskogee, Okla., have started a unique agitation preparatory to asking the next session of the State Legislature for a law under which, at the option of the voters, the credit of counties may be pledged to build permanent roads. The Greater Muskogee Association has organized a spade club. The requisites for membership in this club are the ownership of a spade and an automobile. Applicants for membership must agree to carry a spade or shovel with them on their trips in the country, and to fill at least one hole in the road on each such trip. When the hole

is filled a placard is posted as near the hole as possible bearing the following inscription:

"This hole was filled by a Muskogee business man."

It is the purpose of the spade club to have the commercial organizations over the State organize similar clubs. While the filling of these holes will have only a temporary beneficial effect upon the roads, the effect of the continuous suggestion upon the minds of the law-makers is expected to be very beneficial.

Convicts for Public Road Building.

A plan to have all the able-bodied male State convicts in North Carolina set to work on public roads throughout the State under the general supervision of the State Highway Commission is being strongly urged by the Board of Trade of Asheville. At a recent meeting of the directors of the Board of Trade resolutions were adopted urging the State authorities of North Carolina to take favorable action on the proposition, and it is proposed to arouse public sentiment to the enormous value of this policy, so that the next Legislature may find that the people are strongly behind the plan to work State convicts on the public roads.

Building North Carolina Roads.

T. J. Ray of Elk Park, N. C., writes to the MANUFACTURERS RECORD as follows: "Avery county is now building 35 miles of macadam road with a bond issue of \$150,000. The bonds were sold last spring, and work is progressing right along. Avery county is the one-hundredth and youngest county of the State, established by the Legislature of 1911 from parts of Mitchell, Watauga and Caldwell counties. Elk Park is now building an \$8000 schoolhouse. Every county already has considerable good roads. For mountain scenery, invigorating air, sparkling ice-cold crystal drinking water, Avery county is not surpassed by any section of like size in the South."

FOR A \$12,000,000 ENTERPRISE.

Planning Oklahoma City to Denison Railway and 75,000 Horse-Power Hydro-Electric Development.

The Southwestern Power, Light & Railway Co., W. T. Croslen, president, 406 Security Building, Oklahoma City, writes to the MANUFACTURERS RECORD as follows:

"This company incorporated before Statehood for the construction of an interurban railway from Oklahoma City to Denison, Tex., with a capital of \$12,000,000, was put out of business some years ago, after a considerable amount of grading had been done, by a certain law that went into effect after the Constitution was adopted. The law is now abolished, and our company is getting ready to finance and sell bonds for the building of three large water-power sites, which will entail an expenditure of something like \$1,000,000. We will soon be in the market for the sale of said bonds. We contemplate the construction of several hydraulic electric plants in the south and southeast part of Oklahoma, aggregating a total of 75,000 or near that amount horse-power. The first three plants that we will erect, which will cost about \$1,000,000, will total 23,500 horse-power. We expect to begin the erection of these plants some time in October of this year, and will be in the market with the bonds, also for machinery to erect same."

Big Order for Southern Lumber and Railroad Ties.

D. K. Jeffris Lumber Co., Chicago, wires the MANUFACTURERS RECORD that it has sold the New York Public Service Commission, to be used in the construction of the subway and elevated railway systems, 38,000,000 feet of lumber, and also has sold to France 200,000 white oak railroad ties. The stock to fill these orders will be gotten out at the company's mills at Jeffris, La., and Manchester, Ala., and be shipped through Gulf ports.

MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

Marion Gasoline Shovels.

Some time ago, with a natural desire to keep up with developments in the contracting field, the Marion Steam Shovel Co., manufacturer of steam shovels, dredges and ballast unloaders, Marion, O., decided to build power shovels of the revolving type operated by a gasoline engine through the principle of frictions. In doing this,

of the engine shaft. The gearing is enclosed in a dust-proof casing, and is run in heavy oil or grease.

Reverse motion for propelling the shovel is obtained by means of frictions on a "reversing" shaft, i. e., the right-hand friction turning in one direction, while the left-hand friction turns in the opposite direction. Lever for operating these frictions is so connected that moving it forward will propel the shovel ahead, placing it on center or neutral position will release both frictions, and moving to the rear position causes the shovel to move backward.

Hoisting, swinging and crowding motions are also transmitted from the reversing shaft by a friction and gear mounted on the end of the hoisting drum shaft. The gear meshes with a gear keyed to a horizontal shaft

lower frame of the shovel is keyed on the other end of the vertical swinging shaft. Since the same mechanism is applied at each end of the bull pinion shaft, and since the bevel pinions engage the swinging crown gear at opposite sides, a reverse motion is obtained by throwing in the opposite friction.

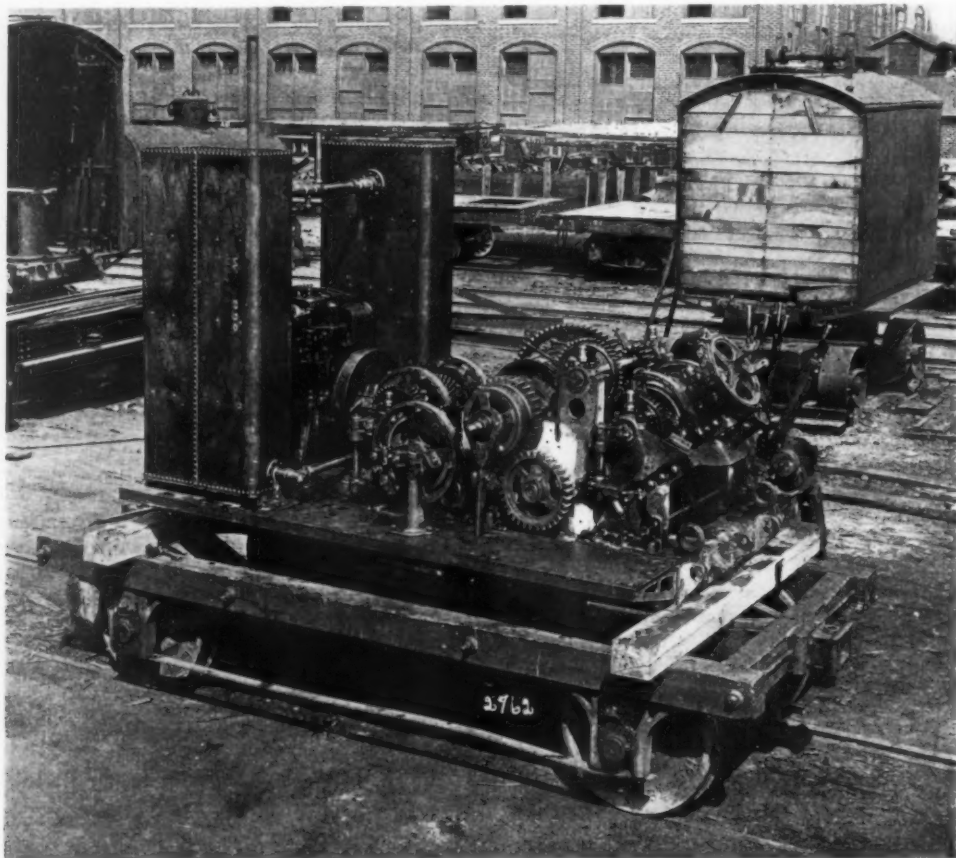
Differential or stepped type hoisting drum is employed, instead of a straight barrel design, as is used on the steam shovel. In steam shovel operation, where throttling engines are used, the speed of the engines and of the dipper can be varied, but with a constant-speed gasoline motor the speed must be stepped down or up. Therefore, by designing a drum of small diameter on one end and large on the other, a hard pull and slow speed can be obtained when the dipper is in the pit and an increased speed with lighter load when the dipper clears the bank. The hoisting friction is very similar in design to the frictions previously described.

Forward of the hoisting drum shaft, and connecting it by means of an intermediate shaft, is a set of reversing frictions similar to the other reversing shaft frictions. These frictions control the crowding of the dipper handle, and they are controlled by a single lever arranged so that when it is in central position both frictions are released and a brake is set to hold the dipper handle in position. The shaft leading from the friction to the boom is provided with a telescopic joint to allow for the variation in height of the boom. It carries bevel pinions on each end, engaging bevel gears.

Test of Turbo-Gear Speed Transformer.

Results of the recent test made by the Consolidated Gas Electric Light & Power Co. of Baltimore of the Turbo-Gear manufactured by the Turbo-Gear Company, Industrial Building, Baltimore, are given by S. B. Austin, M. E., as follows:

"The gear tested was a small one, designed for 25 horse-power at 1800 revolutions per minute of the high-



MARION SHOVEL UNDER CONSTRUCTION, SHOWING POWER PLANT, HOISTING DRUMS AND CONTROL LEVERS.

it was not intended to place gasoline shovels in competition with steam shovels, as the company believes each type has its own place, but to produce a power shovel that would enable contractors to handle medium and light forms of excavating at less cost than it can be done by hand. The internal combustion motor-driven shovel is particularly adapted for localities where smoke ordinances, expensive haulage of coal and water, remoteness from fuel supplies, etc., prohibit the use of the steam shovel.

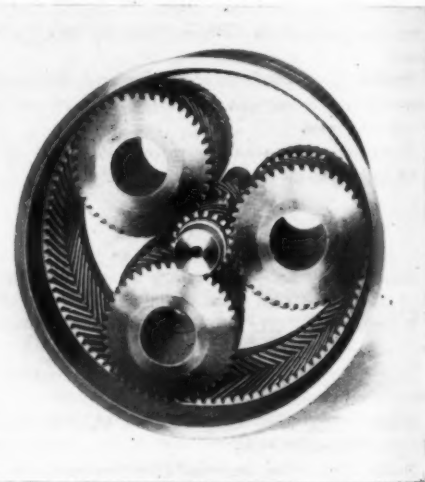
Marion gasoline shovels are known as the revolving, single-motor type, in which all operations are performed by power from one main engine and controlled by frictions of the outside band type. These frictions are operated by hand power, and are so arranged with knuckles and toggles as to minimize the effort on the part of the operator, and the control levers being within easy reach makes it essentially a "one-man" machine. The control of the gasoline shovel is identical with the corresponding type of Marion steam shovel, the levers having the same position and operating in the same manner. To convert the shovel into a single-motor electric shovel it is only necessary to substitute an electric motor of the proper capacity for the gasoline engine, as the rest of the mechanism is identical.

Constant-speed, four-cylinder, four-cycle, vertical marine type, water-cooled, splash lubricated motor furnishes the power. It is equipped with a throttling governor control, jump spark ignition and high tension magneto. By fitting the motor with a proper carburetor it is claimed to be operated successfully on any fuel down to 39 degrees Baume. Power is transmitted from the engine to a bevel pinion mounted on an extension

running directly over the rotating center. The opposite end of this shaft carries a bevel pinion, which engages the bevel gear on the vertical propelling shaft, the lower end of which is designed exactly as on a steam shovel. The reversing shaft also carries a spur gear engaging a gear on the swinging or bull pinion shaft. On each end of this shaft is mounted a driver keyed to the shaft and a friction housing which is keyed to a gear mounted loosely on the shaft and fitted with bronze bushings. This gear is actuated by an outside band friction and engages a gear keyed to a shaft directly below and forward. On the other end of this shaft is keyed a bevel pinion meshing into the swinging crown gear, which, in turn, is keyed to the vertical swinging shaft. A spur pinion which meshes into the large rotating gear on the



MARION REVOLVING SHOVEL.



INTERIOR MECHANISM SHOWING DOUBLE HELICAL GEARS.

speed shaft, and had, prior to this test, been run continuously for 10 hours a day for about six months in the shop of the Universal Machine Co., Industrial Building, Baltimore.

"A 35 horse-power C. & C. motor was connected up; that is, the fields were separately excited, the field current being maintained at a constant value of 1.8 amperes throughout the test, the armature current was obtained from a motor generator set and was maintained at an approximately constant value of 130 amperes; the voltage on the armature was varied by means of varying the field current of the generator. A series of readings was taken with a prony brake attached directly to the motor shaft at different speeds. In each case the speed regulator being shifted, the brake was tightened until the armature current reached the required value, when the field current, speed and load on the brake were read at the same instant.

"The gear was then connected to the motor at its slow-speed end, and the prony brake was attached to the high-speed shaft of the gear, so as to read the power transmitted by the gear, and readings were then taken

(Continued on page 73.)

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ala., Birmingham.—City Com. has preliminary plans for construction of 21st St. viaduct; total length to be 1070 ft., with 20-ft. roadway, two 15-ft. sidewalks, two 10-ft. sidewalks, etc.; concrete construction; to replace present viaduct built 24 years ago; estimated cost, \$200,000; preliminary plans prepared by A. B. Hargis in office of Julian Kendrick, City Engr. (Previously mentioned.)

Ark., De Vall's Bluff.—Prairie County Road Dist. No. 1 let contract to M. Kelly, Little Rock, Ark., to construct 4 bridges.

Fla., Clearwater.—Pinellas County Commrs. let contract to Edwards Construction Co., Tampa, Fla., for several bridges in connection with road construction lately noted (under Road and Street Work) let to Edwards Company; bridges reported to cost \$65,000. (See Road and Street Work.)

Mo., Joplin.—City votes Aug. 31 on \$13,500 bonds for viaduct construction; J. B. Hodgdon, 291 Joplin St., official in charge. (Previously noted.)

Okla., Tulsa.—Tulsa County Commrs. let contract Missouri Valley Bridge & Iron Co., Leaworth, Kans., at \$157,986.50 to construct reinforced concrete bridge with 18 spans, etc., as recently described. (Lately noted inviting bids, etc.)

Tenn., Chattanooga.—Cincinnati, New Orleans & Texas Pacific Ry. plans to remodel bridge across Tennessee River; C. Dougherty, Ch. Engr., Cincinnati, O.

Tenn., Chattanooga.—Western & Atlantic Ry., Southern Ry. and New Orleans & Texas Pacific Ry. will construct viaduct over Riverside Driveway; W. H. Wells, Ch. Engr. of Construction for Southern, Washington, D. C., preparing plans.

Tex., Llano.—Llano county voted bonds to construct bridges; will at present issue \$24,000 for construction of 3 low-water concrete bridges and \$10,000 for one-half cost of bridge to be built across Colorado River jointly by Llano and Burnet counties; Louis H. Bruhl, County Judge, (Jas. J. Powers, Engr., Dallas, Tex., lately noted to prepare plans and specifications for bridges.)

Va., Richmond.—City awarded contract to Javi-Perkins Construction Co., Richmond, at \$3216.80, exclusive of cement, to construct

2 concrete archway culverts over Reedy Creek.

CANNING AND PACKING PLANTS

Ga., Moultrie.—Moultrie Packing Co. awarded contract for additions to plant. (Lately mentioned) to invest \$30,000 to \$50,000 for additions to include increase of storage capacity from 300 to 1000 hogs daily and of cattle from 50 to 100.)

La., Napoleonville.—South Louisiana Packing Co., capital stock \$100,000, inceptd. by Geo. W. Dodge and others; to build meat-packing plant; electric light and power. (Lately noted proposed, etc.)

La., New Orleans.—Langhoff Bros. Co., A. C. Langhoff, Prest., has let contract for addition to present building; improvements to cost about \$5000; machinery supplied; product, molasses and syrups, in bbls. and cases.

Md., Cambridge.—H. P. Wilder, care of Dixie Realty Co., is interested in contemplated establishment of plant to dry fruits. (Under Machinery, Proposals and Supplies Wanted, lately noted asking prices on evaporators.)

CLAYWORKING PLANTS

Fla., Orlando.—Tile Roofing.—S. A. Duncan and W. W. Whitaker, both of Atlanta Ga., will establish plant for manufacturing tile roofing.

Ky., Paducah.—Paducah Clay Co., lately noted inceptd., will develop clay lands. (See Mining.)

Mo., Fayette.—Brick and Hollow Ware.—Fayette Brick & Tile Co. (lately noted inceptd.), Carl Jaeger, Prest., and T. M. Crump, Secy.-Mgr., will erect 40x170-ft. \$3000 semi-fireproof building; contract let; machinery secured; manufacture brick and hollow ware; daily output, 10,000.

COAL MINES AND COKE OVENS

Ky., Hazard.—Kentucky Block Coal Co. (lately noted organized) will operate 300 acres; 500 tons daily capacity; H. E. Bullock, Prest.; J. B. Allen, V.-P. and Mgr.; J. G. Gough, Secy.; J. M. Roan, Treas. (See Machinery Wanted—Mining (Coal) Machinery.)

Ky., Lackey.—Stanley Coal Co. (lately noted inceptd., capital \$25,000) organized; A. J. Johnson, Prest. and Mgr.; J. O. Johnson, V.-P. and Construction Engr.; Wm. H. Johnson, Secy.-Treas.; develop 300 acres; daily capacity, 250 to 300 tons; cost of machinery, \$10,000.

Ky., Louisville.—Elbert Coal Co., capital \$5000, inceptd. by T. F. Elbert, C. H. Bostic and E. V. DeGott.

Ky., Newport.—Ohio & Kentucky Mining Co. inceptd. by John C. Horner of Newport, J. P. Purdum of Portsmouth, O.; R. S. Wilber of Covington, Ky., and A. A. Setiz of Cincinnati, O.

Md., Rockwood.—E. E. Miller purchased coal underlying farm land and 3 acres of surface for operating base; will construct tipple and storage sheds, lay railway tracks, open mine, etc.

Mo., Windsor.—Bowen Coal & Mining Co., capital stock \$10,000, inceptd. by Richard J. Bowen and others.

Tenn., Alton Park.—Chattanooga Gas & Coal Products Co., Chattanooga, Tenn., will, it is reported, install another battery of coke ovens.

Va., Abingdon.—Egerton Coal Corp. (lately noted chartered, capital \$100,000) is not operating company; owns coal lands and will lease to operators; W. E. Mingea, Prest. and Treas.; W. E. Mingea, Jr., V.-P.; C. F. Cocks, Secy.

COTTON COMPRESSES AND GINS

N. C., Marshville.—Marshville Ginning Co., authorized capital \$20,000, inceptd.; Julian L. Lumis, Prest.; R. C. Newsom, V.-P.; P. P. W. Plyler, Secy.-Treas.; purchased building; install cotton-gin machinery, cost \$4000; daily capacity, 60 bales. (See Machinery Wanted—Electric-light Machinery.)

Okla., Loco.—Farmers' Gin Co. inceptd. by A. F. Robberson, Robert C. Whitten and C. J. Florence; capital stock \$2500.

Okla., Loco.—Farmers' Gin Co., capital \$2500, inceptd. by A. G. Robberson, Robt. C. Whitten and C. B. Florence.

S. C., Charleston.—Mutual Compress & Warehouse Co., \$100,000 capitalization, incorporated by C. F. Middleton and associates; plans to construct cotton warehouse and compress facilities on Cooper River; 15,000 to 20,000 bales cotton storage capacity; purchased site for \$5,000; improvements to include buildings, compressing machinery, dredging, etc.; compress capacity to be 800 to 1200 bales daily; has not determined details.

Tex., Brownsville.—People's Ice & Mfg. Co. will rebuild cotton gin reported burned.

Tex., Italy.—Italy Gin Co., capital stock \$10,000, inceptd. by H. C. McCarter, L. S. Moseley and J. M. Richards.

Tex., Renner.—Renner Farmers' Gin Co., capital \$10,000, inceptd. by F. W. Jackson, J. G. Wells and M. M. Skiller.

COTTONSEED OIL MILLS

N. C., Mooresville.—Farmers' Warehouse & Oil Mills, authorize capital \$30,000, inceptd.; H. A. Smith, Pres.; W. L. Matheson, Secy.-Treas.; J. L. Healey, Mgr.; cost of plant \$30,000; oil, meal and hulls.

DRAINAGE SYSTEMS

Ark., Marion.—Crittenden County Drainage Dist. No. 2 let contract R. H. & G. A. McWilliams, Chicago, Ill., for construction 5,022,000 cu. ft. ditches. (Bids lately noted.)

Fla., Dade City.—Hiram McElroy, Engr., Tampa, Fla., is preparing plans for proposed drainage system (for 25,000 acres) around Dade City.

Tex., Austin.—State will vote upon issuing \$120,000 bonds for reclaiming 120,000 acres in County Levee Dist. No. 2. Arthur A. Stiles, State Reclamation Engr.

ELECTRIC PLANTS

Ala., Atmore.—W. M. Carney Co. is reported as to build 5 mi. transmission system.

Ala., Jacksonville.—Jacksonville Light & Power Co., F. H. Chamberlain (also Gen. Mgr. Alabama Power Co., Birmingham, Ala.), Gen. Mgr., will build distribution system, including mazda street-light contract; 109 customers at start and 20 40-watt mazdas for streets; electricity to be sup-

plied by Alabama Power Co.'s 22,000-volt line to Piedmont; service to begin Dec. 1. (Jacksonville Light & Power Co., capital \$10,000, lately noted inceptd.; Thos. W. Martin, Prest.)

Ga., Baconton.—City voted \$12,000 bonds, \$5500 being for construction electric-light plant and water-works; J. B. Miller, Mayor. (Lately noted to vote, etc.)

Ga., Graymont.—Cities of Graymont and Summit will vote on issuing \$5000 bonds to build electric-light plant to supply both the municipalities. Address The Mayor.

Ga., Savannah.—Georgia-Carolina Utilities Co., capitalized at \$15,000, inceptd. by S. S. Henry, J. A. Ingram and others; to operate electric plant, etc.

Ga., Summit.—Cities of Summit and Graymont will vote on issuing \$5000 bonds to build electric-light plant to supply both the municipalities. Address The Mayor.

Ky., Hawesville.—Hawesville Water & Light Co., capital \$12,000, inceptd. by W. H. Williams and associates.

Ky., Henderson.—City plans construction of power-house for municipal electric-light plant; L. P. Hite, Supt.

La., Whitecastle.—City voted \$25,000 bonds to construct combined electric-lighting system and water-works; Xavier A. Kramer, Engr., Magnolia, Miss.

Md., Baltimore.—Consolidated Gas, Electric Light & Power Co. will erect additions to depot on Monument St. near Front St.; 2 wings, 48x135 and 47x142 ft., respectively; 1 stories; brick, concrete and steel construction.

Miss., Prentiss.—Prentiss Electric Light & Mfg. Co. is reported to install 40 H. P. oil-burning engine.

Miss., Wesson.—City plans construction electric-light plant and water-works; engaged M. L. Culley, Engr., Jackson, Miss., to prepare plans and specifications. Address The Mayor.

Mo., Bevier.—City plans to vote on issuing \$10,000 to \$15,000 bonds to increase street-lighting facilities and for other street improvements. Address The Mayor.

Okla., Grove.—City, W. H. Davis, Clerk, will make extensions to electric-light plant; no bids; construction under superintendent of light plant. (See Water-works.)

Okla., Jones.—City voted \$10,000 bonds for electric-lighting and water-works; Benham Engineering Co., Engr., Colcord Bldg., Oklahoma City. (Mentioned in July.)

Tenn., Henderson.—City, J. I. Galbraith, Mayor, will later ask bids on electric-light plant construction; \$13,000 bonds voted; lately noted. (See Water-Works.)

Tenn., Madisonville.—M. C. King, Copperhill, Tenn., and associates will organize company to build electric-light plant.

Tex., Denton.—State North Texas Normal School will build power-house costing \$12,750; let contract to J. F. Johnson of Denton.

Tex., Denton.—State College of Industrial Arts will build power-house; cost \$7500; let contract to J. F. Johnson of Denton.

Va., Farmville.—City let contract J. B. McCrary Co., Atlanta, Ga., to extend water and light system and construct sewers.

Va., Fink.—Norfolk & Western Ry. will equip its water supply station with electrical machinery for driving pumps; has let contract to Southwestern Engineering Co., Bristol, Va.; will obtain electricity from transmission system of St. Paul Light & Power Co.

FERTILIZER FACTORIES

Ala., Montgomery.—Nitra-Germ Co., Savannah, Ga., G. B. Burgdorf, Montgomery, agent, will establish plant to manufacture culture for nitrogen bacteria for leguminous crop.

Fla., Indian River City.—Indian River Limestone Co. will establish lately-noted plant; H. H. Sisson, Prest.; M. Maddox, Secy.; R. Nelson, Mgr.; will install machinery, cost \$2000, to crush and pulverize limestone for agricultural use, also coquina building rock; daily capacity ground limestone, 30 tons.

N. C., Wilmington.—N. B. Josey Guano Co., Tarboro and Scotland Neck, N. C., will establish guano mixing plant to cost \$15,000; erect 280x127-ft. 1-story frame building, with composition roof.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

FLOUR, FEED AND MEAL MILLS

Ark., Wilmet.—Wilmet Mfg. Co., J. C. Graham, Pres.-Mgr., and W. P. Maingault, Secy.-Treas., will operate lately-noted flour mill; building is erected; will install machinery. (Capacity previously reported as 50 to 75 bbls. flour daily.)

Fla., Webster.—J. E. Hayes and E. L. Padgett will establish corn mill for meal and grits; has purchased machinery.

Okla., Collinsville.—Lemmon & Swinheart purchased C. D. Evans flour mill with daily capacity 50 bbls.; will overhaul plant and install short process equipment of machinery.

Okla., Bartlesville.—E. J. Clancy, Little Rock, Ark., will build flour mill and 10,000-bus. grain elevator.

Tex., Clifton.—Clifton Mill & Elevator Co., capitalization \$25,000, organized by J. F. Weiser of Hico, Tex., and others; purchased flour mill and grain elevator; will overhaul machinery and install new additional equipment.

Va., Castlewood.—Castlewood Mills, capital stock \$25,000, inceptd.; J. M. Porter, Pres.; R. C. Meade, V.-P.; R. A. Fletcher, Secy.-Treas.; W. D. Wright, Gen. Mgr.

FOUNDRY AND MACHINE PLANTS

Fla., Jacksonville.—Stoves.—Dixie Metal Specialty Co., capitalization \$10,000, organized; plans to manufacture charcoal stoves; Mark G. Ray, Pres.; Arthur S. Harris, V.-P.; J. R. Reese, Secy.-Treas.

Md., Baltimore.—Iron Foundry.—P. Kennedy's Foundry, Jos. P. Kennedy, Pres., let contract to Edw. Brady & Son, 113 Cathedral St., Baltimore, to erect building for pattern and core shop on Light St. adjoining plant on S. Charles St.; 24,000 sq. ft. ground floor space; 3 stories; brick. (Previously noted.)

Md., Baltimore.—War Munitions.—Munitions Supply Co. is proposed to be organized through W. W. Lanahan & Co., Calvert Bldg.; negotiating for contract to manufacture 250,000 shells; plans to arrange for producing these shells in shops of following: John B. Adt Co., 324 N. Holliday St.; Sinclair-Scott Co., Wells and Patapasco Sts.; E. J. Codd Co., 700 S. Caroline St.; Page Engineering Co., Latrobe Park terrace; Chas. White Gas Engine Co., Charles and Winder Sts.; F. S. & G. L. Brown Machine Co., 20 E. Fort Ave.; Crook-Kries Co., 28 Light St.

Md., Baltimore.—Foundry.—Crown Cork & Seal Co., Gullford Ave. and Oliver St., will erect foundry building; reinforced concrete construction; Otto G. Simonson, Archt., Maryland Casualty Bldg., Baltimore; West Construction Co., Knickerbocker Bldg.; R. B. Mason, 308 W. Madison St.; Monmonier & Sorrell, 1711 McCulloh St., all of Baltimore, are the contractors invited to bid on construction.

N. C., Wilmington.—Foundry.—L. H. Simmons plans organization \$125,000 company to manufacture forced-draft steam boiler grate system he has invented.

GAS AND OIL ENTERPRISES

La., DeRidder.—Co-operative Oil, Gas & Mineral Co. inceptd. to develop 2000-acre lease; M. J. Kohler, Pres., DeRidder; John A. Williams, V.-P., Shreveport; W. D. Schilling, Secy., DeRidder.

Okla., Allen.—Oil Refinery.—Crystal White Refining Co. inceptd. by A. F. Vandersall, N. B. Vandersall and others, all of Oklahoma City; capital stock \$25,000; will build oil refinery.

Okla., Allen.—Oil Refinery.—Crystal White Refining Co., capital stock \$25,000, inceptd. by A. F. Vandersall, LeRoy Paddock and N. B. Vandersall, all of Oklahoma City.

Okla., Cushing.—Union Petroleum Co., capital \$15,000, inceptd. by L. H. Owen of Cushing and Gus A. Mascho of Francis, Okla.

Okla., Duncan.—Three Point Oil & Gas Co., capital stock \$30,000, inceptd. by H. W. Sitton of Duncan, C. C. Littleton of Fort Worth, Tex., and R. J. Birdwell of San Angelo, Tex.

Okla., Duncan.—Three Point Oil & Gas Co. inceptd. by R. J. Birdwell, C. C. Littleton and H. W. Sitton; capital stock, \$30,000.

Okla., Jennings.—Oil Refinery.—Mid-Continent Refining Co., care of Jennings Club, will build refinery with daily capacity 2000 bbls. oil; arranged for increase to 3000 bbls.; now preparing plans and specifications.

Okla., Muskogee.—Gaspipe Line.—Greater Muskogee Assn. organized committee to fur-

ther plans for bond election on \$200,000 for laying pipe line from nearby gas fields, to supply gas for manufacturing.

Okla., Oklahoma City.—Carnation Oil Co., capital \$25,000, inceptd. by C. J. Webster, O. W. Dickerson and Chas. Mang.

Okla., Oklahoma City.—Oil Refinery.—North American Refining Co., capitalization \$250,000, inceptd. by C. F. Colcord, Irving H. Wheatcroft and John Maney.

Okla., Tulsa.—Live Oak Oil & Gas Co. incorporated by H. B. Frederick, Frank Hinderliter, R. E. Fenton and others; capital stock \$8000.

Okla., Tulsa.—Harmony Oil & Gas Co., capital stock \$15,000, inceptd. by G. E. Foster, R. A. Underwood and M. C. Wheeler.

Okla., Tulsa.—Jitney Oil & Drilling Co., capital stock \$5000, inceptd. by D. C. Richardson, Jr., W. A. Brownlee and F. A. Haver.

Okla., Tulsa.—United Producers, capital stock \$100,000, inceptd. by W. D. Abbott of Tulsa, Isaac Shuler of Bowling Green, Okla., and others.

Okla., Tulsa.—Planters' Producing Co., capital stock \$50,000, inceptd. by G. N. Wright, F. A. Haver and W. A. Brownlee.

Tenn., Chattanooga.—Consolidated Oil & Gas Co., capital \$100,000, inceptd. by Paul Heyman, Sol Edlestein, Sam Barron and others.

Tenn., Oneida.—Southern Oil & Gas Co., capital stock \$15,000, inceptd. by A. C. Terry, L. H. Morrison, J. L. Price and others.

Tex., Corpus Christi.—Natural-gas Supply. C. L. Witherspoon, Corsicana, Tex., applied for 30-year franchise to pipe natural gas throughout Corpus Christi.

Tex., Houston.—Southern Petroleum Co., capital \$10,000, inceptd. by W. H. McCarthy, J. H. Carroll and Wm. Cumming.

Tex., Lockhart.—First Lockhart Oil Co. incorporated by J. L. Brown, L. J. McChesney and H. E. Waynwright; capital stock \$10,000.

LUMBER MANUFACTURING

Ark., Rye.—Blankenship & Sullivan will install additional new machinery in sawmill.

Fla., Groveland.—Edge-Dowling Lumber Co. will build sawmill.

Fla., Miami.—McCrimmon Lumber Co. will rebuild plant reported damaged by fire.

Fla., Miami.—McDonald Lumber Co. will rebuild plant reported damaged by fire.

Fla., Riverdale.—Bryan & Smith Timber Co. (D. H. Smith and J. P. Bryan) will erect 15 small buildings; mill construction; bids opened Sept. 1; products, wood and ties. (Lately noted organized, capital \$20,000; purchased 4200 acres timber land, having option on 15,000 acres, with plans for turpentine stills, cordwood and cross-ties.)

Tex., New Caney.—H. G. Bolson, Jasper, Tex., will build hardwood mill; reported to have purchased machinery.

W. Va., Charleston.—McKendree Logging Co., capital \$5000, inceptd. by R. G. Welsh, W. W. Williams, B. D. Truslow and others.

METAL-WORKING PLANTS

Ala., Birmingham.—Dental Burrs.—Birmingham Dental Burr Co. will install 4 additional machines for manufacturing dental burrs to increase present capacity of 700 gross monthly; constructs its own machinery.

MINING

Ark., Viola.—Co-operative Zinc Co., Jonesboro, Ark., will be inceptd. by C. L. Kennard, Jonesboro, Ark., and others; develop 40 acres; now doing preliminary work; carbonate and zinc silicate property; may construct dummy railroad. (Lately noted.)

Ga., Canton.—Mica.—American Mica Co. organized with \$100,000 capital stock; will develop mica property; Lachlan Taylor, V.-P., Canton, in charge of developments.

PROPOSAL ADVERTISEMENTS

IN THIS ISSUE

PUBLISHED ON PAGES 80 and 81.

In order to secure best bids from leading engineers, contractors and investment houses, the proposal advertising columns of the Manufacturers Record are invaluable.

Rate 20 cents per line per issue.

When Proposal Advertisements cannot be sent by mail in time to secure insertion before date for opening bids, please wire advertisement copy by Night Letter.

Proposal Advertising must reach us not later than 9 A. M. Wednesday for publication in issue of that week.

Tex., Mart.—Mart Gas Co., capital stock \$50,000, inceptd. by Robt. Law, Jr., Edwin D. Bartlett and Edwin B. Reeser.

Tex., Waco.—Charley Newton Oil Co., capital stock \$10,000, inceptd. by N. B. Williams, W. W. Seely and Chas. E. Moore.

ICE AND COLD-STORAGE PLANTS

Fla., Okeechobee.—Okeechobee Ice Co. has plans for construction 96x37-ft. plant building and 38x35-ft. addition for boiler-room; install compressors, Corliss engines, etc. (Lately noted inceptd., etc.)

Mo., St. James.—St. James Ice, Electric & Power Co., capital stock \$40,000, inceptd. by H. W. Alverson, J. F. White and John Boggs.

LAND DEVELOPMENTS

Ga., Savannah.—Central Junction Land Co., capitalized at \$12,000, inceptd. by Savage H. Lynah, H. P. Howard, T. F. Cook and D. G. Heidt; will develop land for agricultural purposes; divide into farms.

N. C., Winston-Salem.—Buena Vista Co. let contract to Shore Transfer Co., Winston-Salem, to grade streets for suburban development; will develop 330 acres; recently organized for this purpose.

Okla., Chickasha.—Mount Cavanal Development Co., capital \$50,000, inceptd. by F. L. Mercer of Chickasha, W. E. Kennedy of Seymour, Tex., and others.

Tex., Beaumont.—Pine Island Land & Cattle Co., capital stock \$10,000, inceptd. by A. E. Broussard, Jas. W. O'Neal and J. V. Fleming.

W. Va., Barboursville.—Farmdale Improvement Co., capital \$10,000, inceptd. by E. R. Vickers, J. W. Dingess, Geo. J. McComas and others.

(Previously noted inceptd. at Atlanta by A. Rust Oppenheim and L. Taylor of New York, H. N. Randolph and R. S. Parker of Atlanta.)

Ga., Pickens County.—Potash.—Lachlan Taylor, V.-P. American Mica Co., Canton, Ga., A. Rust Oppenheim of New York, representing English syndicate, and others are reported as having purchased 2 beds potash and to develop this property.

Ky., Midway.—Phosphate.—Andrew Hawkins, Lawrenceburg, Ky., purchased 267 acres land reported to contain several hundred thousand tons phosphate; contemplates development.

Ky., Paducah.—Clay.—Paducah Clay Co., capital \$4000, inceptd. to develop 100-acre tract clay; stockholders include H. R. Lindsey, Luther F. Carson, Luke T. Burradell (Secy.-Treas.), R. R. Winston and C. E. Jennings.

Mo., Aurora.—Aurora Union Mining Co., capital \$50,000, inceptd. by Wm. A. McAtee, John T. Woodford and Emmet L. Arnold.

Mo., Carthage.—Marble.—Lautz-McNerney Quarry Co. will increase capacity for finishing marble; install 17 new additional machines costing \$40,000; has purchased this equipment.

Mo., Carthage.—Forsythe Mining Co. increased capital stock from \$10,000 to \$17,000.

Mo., Duenweg.—Lead and Zinc.—Herman Jones of Joplin, Mo.; E. R. McClelland and M. R. Perry of Kansas City, Mo., will build concentrating mill; invest \$37,000 for plant and equipment; install 165 H. P. engine, 150 H. P. engine, compressor, etc.

Mo., Joplin.—Hoge Mines Co., capital stock \$100,000, inceptd. by C. L. Hoge, A. P. McCully and F. Hoge.

Mo., Joplin.—Gore Mining & Milling Co., capital stock \$5000, inceptd. by Frank Oliver, J. X. S. Chitwood and Elliott Lee.

Mo., Joplin.—V. & P. Mining Co., capital stock \$25,000, inceptd. by C. Plunkett, A. W. Thurman and W. A. Van Hafften.

Mo., Joplin.—Lead and Zinc.—Batesville Mining Co., 705 Frisco Bldg. (lately noted inceptd., capital \$6000), organized; D. C. Dorr, Pres.; Victor Wilber, V.-P.; Clyde H. Miller, 521 N. Wall St., Secy.-Treas.; J. L. Allington, Mgr.; develop 40 acres; daily capacity, 10 tons; open mining machinery bids Sept. 20. (See Machinery Wanted—Mining Machinery.)

Mo., Joplin.—Lead and Zinc.—V. & P. Mining Co., capital stock \$25,000, inceptd. by C. Plunkett, A. W. Thurman, W. A. Van Hafften, each of Joplin, and A. W. Van Hafften of Minneapolis, Minn.

Mo., Joplin.—Zinc.—Wichita Zinc Mining Co., capitalization \$25,000, inceptd. by R. F. Chambers, A. M. Gilder and Jessie E. Gilder.

Mo., Kansas City.—Lead and Zinc.—Fidelity Mining Co., 618 Bryant Bldg. (lately noted inceptd., capital \$10,000), operates zinc and lead mining and milling; develops 56 acres; mill of 300 tons capacity; J. W. Hoffman, Pres. and Treas.; John Taylor, V.-P.; C. V. Jones, Secy.

Mo., Prosperity.—Lead and Zinc.—Frank Haley and associates will develop 15-acre lead and zinc property; planning to construct 150-ton concentrating mill.

Mo., Webb City.—Tom C. Mining Co., capital \$2000, inceptd. by T. F. Coyne, A. B. Hatton and Roy F. Coyne.

Okla., Tulsa.—Jo Mining Co., capital \$12,000, inceptd. by T. J. Dozier of Tulsa, Thos. A. Bell of Muskogee, Okla., and Mary S. Northrop of St. Louis, Mo.

Okla., Tulsa.—Lead and Zinc.—Oklahoma Consolidated Lead & Zinc Mining Corp., capitalization \$250,000, inceptd. by L. L. Hutchison, J. P. Hutchison, both of Tulsa; L. W. Gray of Kansas City, Mo., and others.

Tenn., Carson Springs.—Manganese.—Southern Iron & Fuel Co., Birmingham, Ala., lately incorrectly noted as developing property at Carson Springs, states company's only manganese operation is at Newport, Tenn.

Tenn., Mt. Pleasant.—Hoover & Mason, Chicago, Ill., purchased 150 acres phosphate land and are reported as to develop.

Tex., Abilene.—Eastland County Mining, Oil & Gas Co. inceptd. by E. N. Kirby, O. H. Crawl and J. A. Stanfield; capital stock \$10,000.

Va., Staunton.—Mica.—Virginia-Carolina Mica Corp., capitalization \$10,000, inceptd.; I. N. Graham, Pres., Deerfield, Va.; Herbert J. Taylor, Secy.-Treas., Staunton, Va.

MISCELLANEOUS CONSTRUCTION

Fla., Sarasota.—Pier, etc.—City proposes to construct recreation pier and bathing pavilion; Geo. L. Roberts has plans and specifications.

Ga., Augusta.—Levee and Wharf.—City opens bids Oct. 6 for sale of \$250,000 flood-protection bonds; plans to complete construction of levee with exception of paving bank; contemplates \$23,000 expenditure to improve wharf or \$40,000 to build wharf on Bay St.; probably concrete and steel construction. Nisbet Wingfield, City Engr.

Ga., Savannah.—Dock.—Savannah Dock & Warehouse Co., \$100,000 capital stock, inceptd. by Frank N. Smalley, E. M. Thorpe and P. E. Seabrook.

La., Alexandria.—Levees.—Red River, Atchafalaya and Bayou Boeuf Levee Dist., under auspices State Board of Engrs., New Orleans, will construct levees totalling 400,000 cu. yds. work; bids until Sept. 10. Address The Mayor. (See Machinery Wanted—Levee Construction.)

Md., Baltimore.—Crane Runway.—Baltimore & Ohio R. R. let contract to J. J. Walsh & Son, 1523 Maryland Ave., Baltimore, to extend crane runway at Mount Clare from boiler-room into yard; about 200 ft.; cost about \$5000; M. A. Long, Engr.

Mo., Harrisburg.—Revetment.—U. S. Engr. Office, Kansas City, Mo., will construct standard revetment on Missouri River 2 mi. from Harrisburg; 13,000 ft.; bids until Sept. 20. (See Machinery Wanted—Revetment.)

Tenn., Chattanooga.—Railway Incline.—Nashville, Chattanooga & St. Louis Ry., H. McDonald, Ch. Engr., Nashville, will construct incline to facilitate handling river traffic; incline to consist of cradle mounted on incline track down banks of river.

MISCELLANEOUS ENTERPRISES

Ark., Little Rock.—Gravel.—Arkansas Construction Co., 632 Southern Trust Bldg. (lately noted inceptd., capital \$15,000), organ-

Co., capital
ett, A. W.
Batesville
tely noted
D. C.
Clyde H.
as.; J. L.
daily ex-
inery bldg
d-Mining
P. Min-
td. by C.
Van Haff-
n Hafften
e Mining
by R. P.
E. Glider.
ce.-Fidel-
e. (Lately
ates sine
velops 5
W. Hoff-
r, V.-P.;
c.-Frank
to 15-acre
to con-
Co., capi-
B. Hat-
ital \$12,
A. Thos.
Mary S.
klahoma
Corp.
L. L.
Tulsa;
others.
nes.-E.
g prop-
pany's
ewport,
Mason,
osphate
Mining,
O. B.
stock
Carolina
td.; I.
Herbert
TION
uses to
g pas-
spec-
City
lood-
con-
aving
re to
rf on
con-
ck &
ceptd.
and P.
Atch-
nder
Or-
00,000
dres-
ted-
more
sh &
ex-
trem
cost
ngr.
ruct
pt.
mi.
ed
)
-H.
con-
ver-
ted
S
on-
g, 00,
00,000

ind; L. T. Osborn, Mt. Vernon, Ind., Prest.;
R. S. Wilson, Secy.; L. W. Raben, Treas.
and Mgr.; will install river-washed-gravel
machinery.

D. C., Washington—Laundry.—National
Laundry Co., 21-23 Pierce St., received bids
to add to building at 19 Pierce St.; Wm.
Lowenthal, Archt., Philadelphia, Pa.

Fla., Tampa—Drainage Contractor.—Dewey
Drainage Excavating Co. of Florida, capital
stock \$100,000, inceptd. for drainage and other
contracting; Ellsworth A. Dewey, Prest.,
Washington, D. C.; Nathaniel W. Green,
V.P.; L. G. Aymard, Secy.; both of Tampa.
Ga., Cartersville—Laundry.—W. E. Whertly
will establish steam laundry; has secured
building and purchased machinery.

La., New Orleans—Grain Elevator.—Board
Port Commrs. will receive bids until Sept.
15 for furnishing and installing pile founda-
tions for workhouse, annex, drier-house,
beller and transformer-house and connec-
tions of grain elevator to be built on Miss-
issippi River; plans and specifications on
file office, Ford, Bacon & Davis, 921 Canal
St., New Orleans; recent report outlined
plans for construction grain elevator, to in-
clude 60 storage bins, machinery with hourly
capacity 20,000 to 25,000 bu. grain, storage
capacity 1,021,950 bu. grain, hourly capacity
8000 to 100,000 bu. for shipping, etc.

Mo., Kansas City—Grain Elevator.—Mc-
Ewen Elevator Co., capital stock \$5000,
inceptd. by D. W. McEwen, H. J. Puckett and
H. A. Birmingham.

Mo., St. Louis—Dairy.—Donnell Milk Co.,
capital stock \$15,000, inceptd. by J. F. Don-
nell, E. J. Donnell and P. J. Breckenridge.

Mo., Wellington—Grain Elevator.—Well-
ington Elevator Co., capital stock \$10,000,
inceptd. by Henry Schoepenhorst, A. L.
Kordes and Henry E. Meese.

N. C., Salisbury—Crematory.—City contem-
plates building crematory for refuse. Ad-
dress The Mayor.

Okla., Bartlesville—Grain Elevator, etc.—
E. J. Clancy, Little Rock, Ark., will build
10,000-bu. grain elevator and flour mill.

Okla., Muskogee.—Bobart Hardware Co.
inceptd. by C. T. Burns of Muskogee, S. C.
Bobart of Bentonville, Ark., and others;
capital stock \$10,000.

Okla., Tulsa—Construction.—Gilmore Con-
struction Co., capital stock \$6000, inceptd. by
S. A. Gilmore and F. D. Ziegler of Tulsa
and Isaac Shuler of Bowling Green, Okla.

Tenn., Nashville.—Publishing.—Tennessee
Educator Publishing Co., capital stock \$5000,
inceptd. by W. R. Bourne, S. S. Stephenson,
M. S. Ross and others.

Okla., Nowata—Publishing.—Nowata Star
Publishing Co., capital stock \$5000, inceptd.
by Sam F. Wilkinson, Hugh Branson and
H. W. Reed.

Okla., Oklahoma City—Engraving.—New-
land Engraving Co., capital \$2000, inceptd. by
Jas. T. Neyland, Carrie Leyland and L. Rob-
inson.

Okla., Oklahoma City—Engraving.—Ney-
land Engraving Co. inceptd. by James T.
Newland, Carrie Neyland and L. Robson;
capital stock, \$2000.

S. C., Walhalla—Laundry.—Geo. L. Wilson
and others contemplate installation of laun-
dry; probable cost of initial equipment
\$500; have steam and water supply. (See
Machinery Wanted—Laundry Machinery.)

Tex., Galveston—Laundry.—O. K. Laundry
will rebuild burned plant; plans increased
facilities.

Tex., Hillsboro—Crematory.—City let con-
tract to J. W. Stokes, Waxahachie, Tex., at
\$700 to construct refuse crematory; M. W.
Lovell, Mayor. (Noted in April as having
voted \$5000 bonds to build crematory.)

Tex., Orange—Printing.—Leader Printing
Co., capital stock \$15,000, inceptd. by W. H.
Stark, H. J. L. Stark and F. H. Farwell.

W. Va., Hinton—Hardware.—New River
Hardware Co., capital stock \$100,000, inceptd.
by A. G. Flanagan, W. B. Bowling, Jos. H.
Miller and others.

MISCELLANEOUS FACTORIES

Ark., Little Rock.—W. A. Bridwell, 155 N.
Evergreen St., Memphis, Tenn., plans to es-
tablish factory.

Fla., Miami—Pineapple Pulp.—J. J. War-
ren will establish \$60,000 plant for manufac-
turing pineapple pulp.

Fla., Tampa—Cigars.—Val. M. Antuono is
reported as to build additional cigar fac-
tory.

Ga., Atlanta—Cereal Coffee.—The Je-ro-mo
Co., J. J. Roberts (of Gainesville, Ga.),
Prest., will lease buildings for lately-de-

scribed roasting and packing plant; receive
bids Sept. 1 on initial instalment of machi-
nery estimated to cost about \$15,000. (See
Machinery Wanted—Roasting (Cereal Coffee)
Machinery, etc.)

Ga., Savannah—Pinapola.—Pinapola Co. in-
corporated by J. J. Warren and E. G. Ash
to manufacture beverage from pineapples.

Ky., Caney—Dyes, etc.—Pearsite Co.,
Oliver Bldg., Pittsburgh, Pa., will install ex-
perimental plant to manufacture dyes, chem-
icals, etc., from canal coal; obtain coal
from Kentucky Block Canal Coal Co.;
lately noted (under Canal City) as reported
to build plant of this character.

Ky., Georgetown—Wheels.—Prather De-
mountable Wheel Co., capital \$40,000, inceptd.
by J. C. Prather, Oklahoma Prather, M. B.
Ainsworth and others.

Ky., Middlesboro—Overalls.—Middlesboro
Overalls Co. will increase capital stock and
capacity of plant.

Md., Baltimore—War Munitions.—Poole
Engineering & Machine Co. let contract on
percentage basis to Cowan Building Co., 106
W. Madison St., Baltimore, to erect machine-
shop building to be used in connection with
recently-closed war-munitions order; build-
ing 1 story; 280x160 ft.; steel; brick curtain
walls; slag roof; wood-block floor on con-
crete base; fan-forced steam heat; auto-
matic sprinkler; cost about \$80,000; con-
tractor will let subbids for steel, roofing and
brick; Emory & Nussear, Archts., Profes-
sional Bldg., Baltimore. (Lately noted.)

Md., Baltimore—Shirts.—Oppenheim, Oben-
dorf & Co., 112-24 W. Fayette St., will make
improvements to plant; rearranging and in-
stalling of additional machinery; building
remodelling.

Md., Elkton—Soap.—International Liquid
Soap Co., capital \$20,000, inceptd. by Clement
M. Egner and others.

Miss., Brookhaven—Creamery.—Eugene A.
Nally and W. H. Martin will build \$4000
creamery; daily capacity 2000 lbs. butter.

Miss., Columbus—Washtubs and Boards.—
Tennessee & Mississippi Mfg. Co. will estab-
lish plant to manufacture patented washtubs
with boards; Jas. A. Fuson, Prest.;
Rufus L. Fuson, V.-P. and Gen. Mgr.; Lu-
ther L. Fuson, Secy.-Treas.; rent building
at present; install machinery costing \$1500
to \$2000. (See Machinery Wanted—Tinner's
Tools, etc.)

Miss., Woodville—Pepper.—R. E. Thomp-
son plans to establish pepper factory.

Mo., Kansas City—Cigars.—Consumers' Ci-
gar Co., capital stock \$25,000, inceptd. to es-
tablish cigar factory; J. E. Killen, Prest.,
Indianapolis, Ind.; T. C. Bowman, V.-P.,
Olney, Ill.; E. T. Gannott, Secy., Chicago.

Mo., St. Louis—Paint.—Rower-Beine Paint
Mfg. Co., capital \$5000, inceptd. by Henry
Rower, A. J. Beine and Fred P. Rower; to
manufacture paint.

Mo., St. Louis—Cartridges.—F. W. Olin.
Prest. Western Cartridge Co. and Equitable
Powder Co., Alton, Ill., is reported as plan-
ning to build cartridge factory.

N. C., Greensboro—Typewriter Ribbons,
etc.—Carolina Ribbon & Carbon Co. orga-
nized to establish plant for manufacturing
typewriter ribbons, carbon paper, etc.; Wm.
E. Sullivan, Mgr.; has ordered equipment
for 4-unit plant; new company affiliated with
B. D. Emanuel & Co., Muncie, Ind. (Lately
mentioned.)

N. C., Wilmington—Thermometers.—National
Electric Thermometer Co., capital
stock \$10,000, inceptd. by T. W. Davis of Wil-
mington, T. B. Jordan and B. W. Jordan of
Kelly, N. C.

Okla., McAlester—State Board of Affairs,
Oklahoma City, will erect factory building
at State Penitentiary; 200x50 ft.; brick and
concrete; fireproof throughout; character
of manufacturing not yet determined.

S. C., Bishopville—Coca-Cola.—Bishopville
Coca-Cola Co., capital \$5000, inceptd. by E. W.
Tisdale and B. B. Epps.

Tenn., Alton Park—Benzol.—Chattanooga
Gas & Coal Products Co., Chattanooga,
Tenn., will, it is reported, build benzol plant
to cost \$150,000.

Tenn., Clarksville—Beverages.—Adams-
Wilson Co., 212 S. 3d St., capital stock \$10,
000, inceptd.; W. M. Adams, Prest.; Gary
Huggins, Secy.-Treas.; W. B. Wilson, Mgr.;
continues bottling soft drinks; formerly
partnership.

Tenn., Nashville—Heaters.—Hygienic Heat-
ing Co., capital stock \$25,000, chartered by
G. B. Chapman, H. L. Williams, B. T. Bees-
ley and others; to manufacture heating
device.

Tex., Fort Worth—Buckles.—Compress
Buckle Co., capital stock \$20,000, inceptd. by

J. A. Todd, H. L. McKeehan and F. B. Mc-
Connell.

Tex., San Antonio—Automobile Tire.—Luck
Tire & Mfg. Co., St. Mary's St., will be or-
ganized by Joe Walsh and E. A. Hutchins
to establish \$100,000 factory in San Antonio
or elsewhere for manufacture of pneumatic
puncture-proof automobile tire, invention of
John J. Luck.

Tex., Sherman—Medicine.—A. B. Richards
Medicine Co. inceptd. by C. S. Craycroft, O.
H. Morrow and Dunk Inman; capital stock
\$100,000.

Va., Culpeper—Lime-Kola.—Lime Kola Co.,
capital stock \$15,000, inceptd.; J. M. Millman,
Prest.; L. R. Sweeney, V.-P.; Wm. F. Down-
ing, Secy.-Treas.

Va., Lynchburg—Cigarettes.—F. D. Ware
& Co. organized to establish cigarette fac-
tory; has secured suitable building and pur-
chased equipment of machinery.

Va., Richmond—Vinegar, etc.—Atlantic
Vinegar Co., capital stock \$50,000, inceptd.;
A. H. Burr, Prest.; S. M. Burr, Treas.; Jas.
C. Page, Secy.; manufacture vinegar, cider,
ginger ale, etc.

W. Va., Cairo—Window Glass.—Cairo Win-
dow Glass Co., capital \$50,000, inceptd. by F.
C. Fely, G. S. Flesher and others of Cairo
and Rene Wittford of Point Marion, W. Va.
(Previously noted.)

W. Va., Martinsburg—Train Signals, etc.—
Automatic Train Signal & Control Co., cap-
ital \$25,000, inceptd. by A. C. Farley, J. F. Ger-
ling, E. J. Fulk and others.

MOTORS AND GARAGES

Fla., West Palm Beach—Garage.—Guy
Whitting will build 100x50-ft. garage; red
nateo construction.

Ga., Atlanta—Garage.—A. C. Langston,
Columbia, Tenn., is reported to build \$50,000
reinforced concrete structure for garage.

Ga., Columbus—Garage.—F. J. Dudley will
build garage; brick construction; cement
floor.

Ky., Owensboro—Automobiles.—Owensboro
Motor Car Co., capital \$4500, inceptd.; O. C.
Williams, Prest.; Lee Hart, V.-P.; R. P.
Keene, Secy.-Treas.

Ky., Owensboro—Automobiles.—Owensboro
Motor Car Co., capital \$4500, inceptd. by O. C.
Williams, R. P. Keene and Lee Hart.

Md., Baltimore—Garage.—Auto Outing Co.,
21 E. North Ave., will build addition to
garage; John Freund, Archt., Hoffman
Bldg., Baltimore; following contractors are
estimating: Edward Brady & Son, 1111-1113
Cathedral St.; A. F. West, 306 Builders'
Exchange Bldg.; L. Schoenlein & Son, 2217
E. Baltimore St.; Melver Construction Co.,
7 Clay St.; all of Baltimore. (Lately men-
tioned.)

Md., Frederick—Garage.—Mountain City
Garage Co., N. Market St., M. E. Kefauver,
Prest., and H. M. Cramer, Mgr., will erect
10,000 semi-fireproof building; 12,000 sq. ft.;
construction under company's supervision;
install machine-shop equipment, cost \$2500.
(Lately noted, capital \$25,000.)

Miss., Indianola—Automobiles, Garage, etc.
Safety First Auto Co. established by W. T.
Pitts and J. H. Evans (Mgr.) and others;
deal in automobiles and parts; conduct gar-
age, repair shop and supply station. (See
Machinery Wanted—Automobiles and Sup-
plies; Sawmills; Grist Mills; Engines (Gas-
oline).)

Mo., St. Louis—Assembling Plant.—Ford
Motor Co., Detroit, Mich., will build addi-
tion to assembling plant at 4100 Forest Park
Blvd.; 150x144 ft.; 5-story structure of glazed
red brick, white terra-cotta trimmings, steel
and concrete, etc.; will double present ca-
pacity; building, machinery, etc., to cost
about \$250,000; Warren C. Anderson, Mgr.,
St. Louis.

N. C., Charlotte—Automobile Assembling.—
Ford Motor Co., Detroit, Mich., will estab-
lish assembling plant; secured building for
this purpose; will install machinery for bor-
ing cylinders, rebarbitt bearings, alter-
ing parts, etc. (Lately mentioned.)

N. C., Mooresboro—Garage, etc.—Queen &
Kanipe will erect 2-story wood building for
garage and blacksmith shop; D. P. Queen
in charge of construction.

N. C., Wilson—Automobiles.—A. W. Abbott
Co., capital stock \$25,000, inceptd. by A. W.
Abbott, M. D. Abbott and Geo. T. Burnett
to deal in Ford motor car.

Tenn., Lexington—Automobiles.—Auto
Sales Co., capital \$1500, inceptd. by J. A. Pope,
Charles F. Ross, E. O. Tall and E. Jones.

Tenn., Nashville—Automobiles.—Brantley
& Ellis Automobile Co., 2701 West End Ave.
(lately noted incorporated, capital \$1000), or-
ganized; Wm. Brantley, Prest. and Mgr.;

handle Detroit Electric, operate garage, re-
pair storage batteries and deal in batteries
and accessories for electric cars. (See Ma-
chinery Wanted—Pumps (Air, Tire), etc.)

Va., Bristol—Automobiles.—H. E. Jones
will erect \$4000 automobile sales and service
building; 1-story; 48x80 ft.; brick walls;
wood trusses; electric lighting; plans by
Clarence B. Kiarfott, Bristol, Tenn.; soon
let construction contract.

W. Va., Huntington—Garage.—T. A. Fields
and W. A. Ginn will build 3-story garage on
100x67½-ft. site.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Miss., Natchez.—Mississippi Central R. R.,
R. K. Smith, Gen. Mgr., Hattiesburg, Miss.,
is reported as to expend \$18,000 for terminal
improvements; to include construction road-
bed, replacing bayou bridge.

Okla., Muskogee.—Missouri, Oklahoma &
Gulf Ry. Co., Wm. Coughlin, Gen. Mgr. for
receivers, Muskogee, will erect 72x98-ft. \$3000
frame building for locomotives; cinder floor;
asbestos roofing.

Tenn., Chattanooga.—Nashville, Chatta-
nooga & St. Louis Ry., H. McDonald, Ch.
Engr., Nashville, Tenn., proposes \$100,000 ex-
penditure to build car shops for repairs
only, new cars to be built at the Nashville
shops; new shops and roundhouses will
probably be of concrete construction. (Pre-
viously noted as planning shop improve-
ments, etc.)

Va., Portsmouth.—Seaboard Air Line Ry.,
W. D. Faucette, Chief Engr., Norfolk, let
contracts to 28 manufacturers for tools, etc.,
to equip shops; machinery to cost \$270,000;
will contract for 13 cranes and 2 air
compressors to cost \$50,000; all largely electric
driven; cost of installation \$25,000; Christian
Construction Co., Durham, N. C., has broken
ground on contract to construct the shops;
buildings to cost \$200,000. (Other details of
shops, etc., lately noted.)

Va., Roanoke.—Norfolk & Western Ry., J.
E. Crawford, Ch. Engr., Roanoke, will build
large addition to framing shop; awarded
contract for structural steel costing about
\$25,000 to Virginia Bridge & Iron Co., Roa-
noke.

ROAD AND STREET WORK

Ala., Linwood.—Marengo County Commrs.
will expend \$60,000 to construct roads from
Hale county line to Demopolis and to Fauns-
dale and Dayton; gravel, sand and clay con-
struction; plans and specifications obtain-
able from J. B. Wilson, Commr., Demopolis,
and W. C. McKnight, Commr., Faunsdale;
bids until Sept. 7. (See Machinery Wanted—
Road Construction.)

Ala., Vernon.—Lamar County Commrs.
contemplate expending \$150,000 for road con-
struction.

Ala., Vernon.—Lamar County Commrs. let
contract G. B. Edgar, Vernon, to grade and
gravel road; \$6400 available; P. S. Milner,
Engr., Vernon. (Bids lately noted.)

Fla., Clearwater.—Pinellas County Com-
missioners' road contract, lately noted rat-
ified with Edwards Construction Co., Tampa,
Fla., calls for 3.34 mi. brick road and sev-
eral bridges; contractors to furnish all ma-
chinery; \$715,000 available; McCrary Co., St.
Petersburg, Fla., Engr.

Fla., Eustis.—City votes Oct. 5 on issuing
\$40,000 bonds for street paving. Address The
Mayor. (Lately noted.)

Fla., Sanford.—Seminole County Commrs.
ordered election Sept. 6 to vote on issuing
\$250,000 bonds for hard surfacing 35 mi.
road.

Fla., Tampa.—Commrs. Public Works will
construct 100,000 sq. yds. street pavement on
various streets; vitrified brick, asphalt
blocks, asphaltic concrete and cement con-
crete; bids until Sept. 7; specifications ob-
tainable at office City Engr. (See Machi-
nery Wanted—Paving.)

Fla., Winter Park.—Town, Percy Dale,
Clerk, will construct brick paving in ac-
cordance with plans and specifications in office
Orange County Road Engr. at Orlando, Fla.,
and concrete paving according to plans and
specifications on file office Town Clerk; bids
until Sept. 20. (See Machinery Wanted—
Paving.)

Ga., Lyerly.—Summerville County Commrs.
rescinded order for recently mentioned elec-
tion (Aug. 28) to vote on \$150,000 bonds for
roads.

Ky., Columbia.—Adair County Commrs.
ordered election Sept. 11 on issuing \$25,000
bonds for road construction.

Ky., Hodgenville.—LaRue county will con-
struct water-bound macadam road to cost

\$7200; bids opened Aug. 20 were not accepted; Jacob Strous, Engr. (Previously noted.)

Ky., Louisville.—Board of Public Works decided on street improvements to be undertaken after Sept. 1; plans \$75,000 expenditure for resurfacing and reconstructing.

Ky., Madisonville.—Hopkins County Commissioners let contract to N. E. Stone, Madisonville, for 1 mi. macadam construction; \$5413.13 available; I. B. Earle, County Engr.

Ky., Nicholasville.—Jessamine County Commissioners, C. S. Woodward, Road Engr., will build 1½ mi. turnpike; bids until Sept. 7. (See Machinery Wanted—Road Construction.)

Ky., Paducah.—McCracken County Fiscal Court awarded contract at \$2781.46 to Bradshaw Bros., Paducah, for constructing Bradshaw Rd.

Ky., Whitesburg.—Letcher county, Henry T. Day, Judge, will build 4 mi. model roadway, in 3 directions; let contract Sept. 7. (See Machinery Wanted—Road Construction.)

La., Lake Charles.—Grand Lake Ward Cameron parish voted \$36,000 bonds for road construction. Address Clerk to Police Jury.

La., Maury.—Sabine Parish Road Dist. No. 3, R. L. Gay and T. Laroux, Police Jurors, will build and improve roads by day labor, superintended by L. F. French, Engr. (\$35,000 bonds lately noted voted.)

La., New Orleans.—New Orleans Motor Speedway Assn., A. F. Brockman, Prest., plans construction 2 mi. automobile speedway 60 ft. wide; board construction; will use 7,000,000 ft. lumber, 75 tons spikes and nails, etc.; build grandstand 2000 ft. long; contemplated total expenditure \$400,000; John A. Prince, Louisville, Ky., in charge of construction.

La., Natchitoches.—Natchitoches Parish Ward 9 voted \$50,000 tax for constructing 12 mi. gravel road. Address Police Jury. (Lately noted.)

La., New Orleans.—Highway Dept., Board of State Engrs., 104 New Orleans Court Bldg., will construct 8.1 mi. earth highway in Red River parish; bids until Sept. 8; W. E. Atkinson, State Highway Engr. (See Road Construction.)

La., Port Allen.—West Baton Rouge Parish Road Dist. No. 1 let contract S. A. Gano, Jackson, Miss., at \$37,735 to construct 27 mi. road. (Lately mentioned.)

La., Winnfield.—Winn parish voted \$50,000 bonds to construct and maintain roads. Address Winn Parish Police Jury.

Md., Baltimore.—City will contract for sheet-asphalt construction, under contract No. 142, on Rosedale St. from Edmondson Ave. 40 ft. north of Arunah Ave., and Arunah Ave. from Rosedale St. to Longwood St.; about 2700 sq. yds.; bids until Sept. 8 by Board of Awards; plans, profiles, etc., on file and specifications obtainable from Comms. for Opening Streets. (See Machinery Wanted—Paving.)

Md., Denton.—Caroline County Comms., Harry Waldorf, Roads Engr., will build 2.03 mi. road near Williston and Beauchamps Branch; bids until Sept. 21; blank forms of proposals, etc., obtainable from State Roads Com., 601 Garrett Bldg., Baltimore. (See Machinery Wanted—Road Construction.)

Mo., Bevier.—City plans to vote on issuing \$10,000 to \$15,000 for street improvements and to increase street-lighting facilities. Address The Mayor.

Mo., Joplin.—City let contract to V. E. Koch, Joplin, at \$8206 to construct concrete pavement on E. 8th St. from Main St. to Frisco Ry.

Mo., Kansas City.—City let contract A. W. Wooley, 2819 Belleville St., Kansas City, at \$4027 for grading 39th St. from Jackson St. to Indiana Ave.

Mo., Kansas City.—City let contract Norton Bros., 3517 Main St., Kansas City, at \$11,895 for grading Woodland Ave. from 43d St. south to Swope Parkway.

Mo., Mansfield.—City voted \$15,000 bonds for road construction. Address The Mayor.

Mo., Seymour.—City voted \$30,000 bonds for road construction. Address The Mayor.

Mo., Sedalia.—Pettis county, Sedalia Twelve-Mile Special Road Dist., let contract to Lee Carpenter, Sedalia, for top-dressing rock road; 2½ mi.; \$3500 available; C. A. Thomas, Engr. (Bids lately noted.)

Mo., St. Louis.—Board of Public Service will improve Skinner Rd. with wood-block paving and granite curb; bids until Sept. 7; plans, specifications, etc., on file. (See Machinery Wanted—Paving.)

Mo., Warsaw.—Benton county has petition in circulation asking for election to vote

\$250,000 bonds to build rock roads; B. R. Burton, Clk. County Court. (Lately incorrectly noted under Sedalia.)

Mo., Webster Groves.—United Railways Traction Co. will improve Lakewood Ave. from Summit Ave. to Rock Hill Rd.; reported to cost \$80,000.

N. C., Angier.—Black River Township voted \$25,000 bonds for constructing roads.

N. C., Asheville.—City will pave Carolina Ave. from Walnut to Woodfin Sts. with concrete; 1200 sq. yds.; bids until Aug. 28; F. L. Conder, Secy.-Treas.

N. C., Dobson.—Surry County Highway Comms. of Siloam and Shoals townships have plans for constructing roads under \$25,000 and \$30,000 bonds lately noted voted; specifications at Dobson; bids until Sept. 6. (See Machinery Wanted—Road Construction.)

N. C., Farmville.—Pitt county, Farmville township, votes Sept. 21 on issuing \$50,000 bonds for road improvements. Address County Comms., Greenville, N. C.

N. C., Hickory.—City will construct 3000 yds. concrete sidewalk. Address The Mayor.

N. C., Kinston.—City bond issue (lately mentioned) is for construction previously noted; paving contract awarded to West Construction Co., Chattanooga, Tenn.; work is progressing; 20,000 sq. yds. Bermudez sheet asphalt on 4-in. concrete base, 10 mi. concrete sidewalks, and curb and gutter.

N. C., Newland.—Avery County Comms. will construct 35 mi. macadam road; now in progress; \$150,000 available.

N. C., Newbern.—Craven County Comms. will construct 20 mi. gravel, bituminous-surfaced roads; use Cape Fear gravel, to be furnished by county; open bids Sept. 6 on hauling and finishing. (See Machinery Wanted—Road Surfacing, etc.)

N. C., Raleigh.—City will expend \$10,000 for sidewalk construction. Address City Engr.

N. C., Reidsville.—Reidsville Commercial and Agricultural Assn., F. M. Runnels, Secy., is interested in furthering paving of Main St. with macadam or plastic.

N. C., West Asheville.—City let contract Reed & Wells, Asheville, N. C., to construct 9000 ft. sidewalks. (Bids lately invited.)

Tenn., Dunlap.—Sequatchie County Road Comms., J. H. Heard, Chrmn., will improve road from Bledsoe county line, by way of Dunlap, to Hamilton county line; bids until Sept. 25; specifications, blank forms, etc., on file in office Comms. and Edw. E. Betts Engineering Co., Const. Engr., James Bldg., Chattanooga, Tenn. (See Machinery Wanted—Road Construction.)

Tenn., Sweetwater.—City votes Sept. 30 on street-improvement bonds for \$5000. Address The Mayor.

Tex., Angleton.—Brazoria county, A. R. Rucks, County Judge, has had lately-mentioned election temporarily enjoined. (In July was noted to vote Aug. 21 on formation of Road Dist. No. 13 and \$150,000 bonds to hard-surface roads.)

Tex., Beeville.—City contemplates election on bonds for street paving; about 18 blocks on principal streets. Address The Mayor.

Tex., Clarksville.—Red River County Comms., Geo. Morrison, official in charge, will issue \$100,000 bonds for road construction.

Okla., Eufaula.—McIntosh county, L. C. Clark, County Commr., defeated lately-noted bonds for road construction.

Tex., Hallettsville.—Lavaca County Commissioners will repair roads and bridges; issues \$7500 bonds.

Tex., Houston.—City let contract Hanson & Sons, Galveston, Tex., at \$6412 for resurfacing Wallisville Rd. from Cushing Ave. to Hunting bayou.

Tex., Ingleside.—Aransas County Road Dist. No. 3 voted \$75,000 bonds for road construction.

Tex., Lufkin.—City let contract for additional paving; 4 blocks streets. Address The Mayor.

Tex., Taylor.—City will contract for 120,000 sq. yds. paving, to include excavations, curbs, gutters, drainage, etc.; bids until Sept. 21; specifications, proposal forms, etc., ready after Sept. 7 and obtainable from W. E. Dozier, Engr. (See Machinery Wanted—Paving.)

Tex., West.—City issued \$12,500 bonds for streets. Address The Mayor.

Va., Alta Vista.—State Highway Com., G. P. Coleman, Engr., Richmond, Va., will build 9½ mi. macadam road between Alta Vista and Otter River bridge and Alta

Vista and Goodwins; plans, etc., on file at Campbell County Clerk's office, Rustburg, Va., where bids will be received until Sept. 4. (See Machinery Wanted—Road Construction.)

Va., Eastville.—Eastville Dist. Road Board of Northampton County will build 55 mi. sand-clay roads; plans and specifications at courthouse after Sept. 15; bids until Sept. 27. (See Machinery Wanted—Road Construction.)

Va., Middleburg.—Loudoun County Comms. will construct 4 mi. macadam road between Middleburg and Pot House; plans and specifications on file at office County Clerk, Leesburg, and J. L. Cresap, Res. Engr., 1218 12th St. N. W., Washington, D. C.; bids until Sept. 3. (See Machinery Wanted—Road Construction.)

Va., Richmond.—City has plans for granolithic curb, gutter and sidewalk in South Richmond; bids until Sept. 1; Chas. E. Bolling, City Engr. (See Machinery Wanted—Paving.)

W. Va., Charleston.—City, B. A. Wise, City Mgr., will pave certain streets and alleys; about 34,000 sq. yds.; bids until Sept. 7. (See Machinery Wanted—Paving.)

W. Va., Hinton.—Summers county, Talcott Dist., J. M. Carden, County Clk., voted \$100,000 road-construction bonds. (Lately noted.)

W. Va., Hinton.—Summers county, Greenbrier Dist., J. M. Carden, County Clk., voted \$150,000 bonds for road construction. (Lately noted.)

W. Va., Welch.—Sam G. Walker & Co. have received contract to build 34 mi. roads.

SEWER CONSTRUCTION

Ala., Thomasville.—Town will contract for drilling well to furnish 200 gals. water per minute; T. H. Tyson, Mayor. (See Machinery Wanted—Well Drilling.)

Fla., Eustis.—City votes Oct. 5 on issuing \$20,000 bonds to construct 3 mi. sanitary sewers and Imhoff tanks. Address The Mayor. (Lately mentioned.)

Ga., Helena.—City votes Sept. 8 on issuing \$12,000 bonds to construct sewer system. Address The Mayor.

Ga., Macon.—City ordered preparation plans and specifications for construction 2 sanitary and 1 storm sewer; estimated cost \$7700; one of the sanitary sewers will cost \$2500. Address City Engineer.

Ga., Savannah.—City plans to bore an additional well and is securing data relative to installing electric pumps, replacing air pumps; E. R. Conant, Ch. Engr.

Mo., Carthage.—City will construct sewers in 2 districts; C. B. Newton, City Engr., preparing plans.

Mo., Joplin.—City awarded contract to V. E. Koch, Joplin, at \$1874 to construct sewer on E. 7th St.

Mo., Kansas City.—Board Public Works let contract L. E. Koehler to construct sewer extension to Christian Hospital site.

Mo., Macon.—City, C. H. Payson, Mayor, will construct water-works improvements; \$30,000 bonds lately noted voted; bids until Sept. 14; includes settling and coagulating basins; filter plant, 2 units, capacity 654,000 gals. daily; pipe, valves, fire hydrants, etc.; E. E. Harper, Consult. Engr., 914 Grand Ave. Temple, Kansas City, Mo. (See Machinery Wanted—Water-works.)

Mo., Poplar Bluff.—City let contract V. E. Koch, St. Louis, at \$16,749 to construct sewers in Sanitary Sewer Dist. No. 2. (Lately mentioned.)

Mo., St. Louis.—City let contract Myers Construction Co., St. Louis, at \$6623 to construct public sewer extensions in sections Nos. 1 and 2.

N. C., Hickory.—Highland Cordage Co. let contract to F. B. Ingold, Hickory, to install 5000 ft. sewer pipe and about 40 bathrooms complete in tenement-houses.

N. C., High Point.—City plans construction outlet for sewer system; cost \$5000. Address The Mayor.

N. C., West Asheville.—City let contract Reed & Wells, Asheville, N. C., to construct 3 lines of sewer 1 mi. long. (Lately invited bids.)

Okla., Marlow.—City will vote Sept. 16 on \$15,000 bonds for main sanitary sewer system; employed Benham Engineering Co., Colcord Bldg., Oklahoma City, to prepare surveys, plans and specifications and supervise construction.

S. C., Columbia.—City will order election on issuing \$300,000 bonds for sewer construction. L. A. Griffith, Mayor. (Previously noted considering \$300,000 bonds, etc.)

Tenn., Henderson.—City, J. I. Galbraith, Mayor, will later ask bids to construct sewer system; \$14,000 bonds voted; lately noted. (See Water-works.)

Tex., Galveston.—City will lay water main, designed to withstand power of wind and wave, to connect Galveston with mainland; replace present water main damaged by recent storm; probably expend several thousand dollars for this and accompanying improvements; M. E. Shay, Commr.

Va., Farmville.—City let contract J. B. McCrary Co., Atlanta, Ga., to construct sewers and extend light and water system; issued \$40,000 bonds.

TELEPHONE SYSTEMS

La., Choupique.—Choupique Telephone Co., capital \$3000, inceptd.; R. B. Trahan, Prest.; G. W. Lacy, V.-P.; J. J. Cosner, Secy.-Treas.

S. C., Orangeburg.—Orangeburg-Bellville Telephone Co. inceptd. by F. C. Bryant, J. R. Fogle and F. D. Bates; operate telephone line, 15 miles, between Orangeburg and Bellville.

S. C., Rock Hill.—Cotton Cloth.—Victoria Cotton Mills will add 82 new looms; has purchased this machinery.

TEXTILE MILLS

N. C., Concord.—Cotton Goods.—Norcott Mills Co., authorized capital \$250,000, organized; C. W. Johnston, Prest., Charlotte, N. C.; C. B. Wagoner, V.-P.; W. G. Broadfoot, Secy.; F. J. Haywood, Treas.; preparing plans to build cotton mill; has ordered machinery. (Lately noted.)

N. C., Granite Falls.—Cotton Yarn.—Falls Mfg. Co. organized; J. D. Elliott, Prest.; L. T. Sharp, V.-P.; D. H. Warlick, Secy.-Treas.; preparing plans to build 5000-spindle cotton yarn mill. (Lately noted to be organized, etc.)

N. C., Hickory.—Cordage.—Highland Cordage Co. organized; Chas. H. Geitner, Prest.; A. A. Shuford, Jr., Secy.-Treas.; will construct 2-story 100x75-ft. building and install machinery for manufacturing cotton twine, sash weight cords, clothes lines, etc. (Lately noted inceptd.; authorized capital stock is \$125,000.)

Tenn., Shelbyville.—Cotton Goods.—Valley Cotton Mills, capital \$50,000, organized by W. J. McGill and others; will build cotton factory; electric power from transmission system of Chattanooga Tennessee River Power Co., Chattanooga, Tenn., which will add to its facilities by building hydro-electric plant on Duck River.

WATER-POWER DEVELOPMENTS

Ga., Cornelia.—City awarded contract to J. T. Phillips & Co., Cornelia, at \$5799.20 to construct dam for municipal electric-lighting plant.

N. C., Burnsville.—Chas. W. Harper, Consult. Engr., Burnsville, and associates propose construction hydro-electric plant; organize company with \$16,000 capital; plant to include 125 H. P. water turbine, 4 mi. transmission line, 75 K. V. A. generator, etc.

Okla., Oklahoma City.—Southwestern Power, Light & Railway Co., W. T. Croslen, Prest., 406 Security Bldg., is preparing to finance and build 3 hydro-electric plants costing about \$1,000,000; develop 23,500 H. P. for transmission by electricity for light and power, including operation of company's proposed interurban railway from Oklahoma City to Denison, Tex., portion of grading completed; expects to begin hydro-electric plant construction in October and be in market for machinery; further contemplates construction several hydro-electric plants in South and Southeast Oklahoma, increasing developments to 75,000 H. P. Previously inceptd. with \$12,000,000 capital to build interurban railway, develop water-powers, etc. (See Machinery Wanted—Electrical Machinery.)

Tenn., Shelbyville.—Chattanooga Tennessee River Power Co., Chattanooga, Tenn., will build hydro-electric plant on Duck River; will thus add to present facilities from its water-power development at Hale's Bar, on Tennessee River, near Chattanooga.

W. Va., Berkeley Springs.—Northern Virginia Power Co., Winchester, Va., will increase water-power development of hydro-electric plant on Cacapon River, 5 mi. west of Berkeley Springs; excavate solid rock bottom of river to depth of 15 ft. to provide for installation water wheel generating 120 additional horse-power; has purchased new machinery.

WATER-WORKS

Ala., Phenix City.—Water Comms., Moss Harrison, Chrmn., let contract Schofield's Iron Works, Macon, Ga., at \$5100 to con-

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ark., Little Rock.—Harry Keats will erect 2-story frame apartment house at 2210 Main St.; cost \$4000.

Ga., Atlanta.—Mutual Realty Co. will erect apartment-house at 61 Forrest Ave.; 3 stories; cost \$45,000; Walker & Chase, Archts., Atlanta.

Ky., Louisville.—General Construction Co. will erect brick-veneer apartment-house at 2812 S. 3d St.; cost \$5000.

Ky., Louisville.—Blanche H. McDowell will erect brick apartment-house at 1007 S. 1st St.; cost \$3300.

Mo., St. Louis.—Dr. Andrew Darling purchased lot on Botanical Ave. and will erect four family flats; each building to contain 4 suites of 3 rooms each, with sun parlors and bath; hardwood floors.

Mo., St. Louis.—H. A. Schokmecht will erect 2-story tenement-house at 2307 Harris St.; cost \$5000.

Tenn., Nashville.—Euclid Realty Co., T. A. Clarkson, Pres., will erect apartment-house on 30th Ave. N.; 3 stories and basement; 6 suites; brick and wood; Johns Manville roofing; wood floors; steam heat; cost \$25,000; Marr & Holman, Archts., Nashville. (Lately noted.)

ASSOCIATION AND FRATERNAL

Ga., Athens.—Young Men's Christian Assn., W. T. Forbes, Gen. Secy., is having plans prepared by Shattuck & Hussey, 1424 S. La Salle St., Chicago, for building; reported cost \$100,000. (Lately noted.)

Md., Baltimore.—Y. W. C. A., Highlandtown Branch, Mrs. W. H. Morriss, 1904 Mt. Royal Ter., Managing Director, is having plans prepared by O. B. Wight, 1122 Munsey Bldg., Baltimore, for building at Clinton St. and Eastern Ave.; cost about \$35,000; construction to begin in fall. (Previously noted.)

Md., Baltimore.—Y. W. C. A. receives bids until Sept. 11 to erect building at Park Ave. and Franklin St.; 7 stories, with basement and subbasement, covering entire lot, 69x141 ft.; colonial brick, white marble and white terra-cotta exterior; steel columns and beams; reinforced concrete floor construction throughout; terra-cotta interior partitions; steam heat; electric lights; electric generating apparatus not to be installed at present; 2 electric passenger elevators; push-button electric service elevator; plunger pavement lift; will contain swimming pool, gymnasium, offices, library, boardrooms, bedrooms and living-rooms, roof garden, classrooms, domestic-science rooms, garbage incinerator, laundry drying-room, etc.; contractors invited to estimate are Edward Watters & Co., 509 N. Charles St.; Edward Brady & Son, 1113 Cathedral St.; B. F. Bennett Building Co., 123 S. Howard St.; Henry Smith & Sons Co., German and Light Sts.; Cogswell-Koether Co., 406 Park Ave.; John Cowan Building Co., 106 W. Madison St.; Chas. L. Stockhausen Co., National Marine Bank Bldg.; Walter E. Burnham, Law Bldg.; John Hiltz & Sons Co., 3 Clay St.; Morrow Bros., Fidelity Bldg.; Irwin & Leighton, Keyser Bldg.; Geo. A. Fuller Co., Fuller Bldg., New York; Norcross Bros. Co., Worcester, Mass.; Jos. Evans Sperry, Archt., 409 Calvert Bldg.; Chas. L. Reeder, Engr. for heating and electric-light wiring, Park Ave. and Saratoga St., Baltimore. (Previously noted.)

BANK AND OFFICE

Fla., Clearwater.—Jas. Hamilton will erect business block for offices, etc. (See Stores.)

Fla., Clearwater.—W. T. Harrison is having plans prepared for building for offices or hotel. (See Stores.)

Tex., Amarillo.—Atchison, Topeka & Santa Fe Ry. will erect addition to office building. (See Railway Stations, Sheds, etc.)

W. Va., Ridgeley.—People's Bank of Ridgeley plans to erect bank building.

CHURCHES

Fla., Tavares.—Methodist church plans to erect building. Address The Pastor.

Ga., Macon.—Lutheran Church of the Redeemer will erect building. Address The Pastor.

Ky., Hopkinsville.—Methodist Episcopal Church opens bids Sept. 10 to erect building;

80x120 ft.; brick and stone; tile roof; steam heat; cost \$55,000; J. Galsford, Archt., Memphis, Tenn. Address R. E. Cooper, Chmn., Hopkinsville. (Lately noted.)

Ky., Scottsville.—First M. E. Church opened bids to erect building; J. N. Guthrie, lowest bidder; plans by R. E. Turbeville, Nashville, Tenn., call for structure 76x60 ft.; brick facing and hollow tile; wood floor; steam or hot-air heat; cost \$15,000. (Noted in June.)

Miss., Crystal Springs.—Baptist church will erect building; pressed-brick walls; 56x80 ft.; cost \$12,000; J. E. Greene, Archt., 508 American Trust Bldg., Birmingham, Ala.

Mo., Kansas City.—First Baptist Church will erect addition to West Side branch at 13th St. and Broadway; install Sunday-school equipment in church at Park Ave. and Linwood Blvd.; erect Sunday-school building at Linwood Blvd. and Olive St.; total cost about \$30,000. Address The Pastor.

Mo., St. Louis.—Independent Evangelical Church has plans by A. Myer, Central National Bank Bldg., for building at Margaretta and Fair Aves.; brick and steel; cost \$70,000.

N. C., Albemarle.—First Baptist Church, Rev. H. P. Walker, pastor, will erect building.

N. C., Burnsville.—Methodist Episcopal Church South will erect building for church and Sunday-school rooms; cost \$10,000. Address Rev. H. M. Wellman, pastor.

N. C., Plymouth.—Baptist church is having plans prepared by J. E. Greene, 508 American Trust Bldg., Birmingham, Ala., for building; brick walls; metal shingle roof; hot-air heat; rolling partitions; cost \$1000. (Lately noted.)

N. C., Winston-Salem.—Grace M. E. Church opens bids Oct. 10 to erect building; 60x120 ft.; ordinary construction; slate roof; wood floor; electric light; cost about \$12,000; steam heat, \$8000; W. C. Northup, Archt., Winston-Salem.

Tenn., Springfield.—M. E. Church South is having plans prepared by Thomas W. Gardner, Nashville, Tenn., and E. E. Dougherty, Candler Bldg., Atlanta, for church and parsonage; church of brick, with stone trimmings and foundation; total cost about \$30,000. (Lately noted to erect parsonage.)

Tex., Fort Worth.—South Side Baptist Church, Rev. J. L. Mahan, pastor, plans to erect building.

Tex., Roanoke.—Presbyterian congregation will erect building to cost about \$6000. Address The Pastor.

CITY AND COUNTY

N. C., Ayden.—Market.—Town purchased site and will erect market-house. Address Town Clerk.

N. C., Asheville.—E. S. Chambliss will erect dwelling at Grove Park.

Tex., Cisco.—City Hall.—City, J. M. Williamson, Mayor, has plans by C. H. Leinbach, 1105 Southwestern Bldg., Dallas, to erect city hall; 46x86 ft.; brick, concrete and frame; Barrett specification tar and gravel roof; natural gas heat; electric lighting; cost \$12,500; building will contain vaults, jail and auditorium with balcony; contract let Sept. 1. (Lately noted.)

Tex., Dallas.—Restroom, etc.—Chas. E. Gross, Dallas County Auditor, receives bids until Sept. 6 to remodel Records Building for Dallas county women's restroom; plans and specifications at office of Woerner & Cole, Archts., 513 Sumpter Bldg., Dallas.

Tenn., Union City.—City Hall.—City defeated \$15,000 bonds to erect city hall. (Previously noted.)

Tex., Houston.—A. E. Kiesling will erect dwelling at Ross Ave. and Connor St.

Tex., Houston.—Col. Thos. H. Ball will erect dwelling at Audubon Pl. and W. Alabama St.

Tex., Hutchins.—Home.—Chas. Gross, County Auditor, Dallas, receives bids until Sept. 6 to erect home at county farm; 41x110 ft.; 2 stories; brick and reinforced concrete; tar and gravel roof; concrete and cement floors; hot-water heat; lighting from service corporation; cost about \$25,000; Woerner & Cole, Archts., 513 Sumpter Bldg., Dallas. (Lately noted at Tex., Dallas.)

Tex., San Antonio.—Bandstand, etc.—City will erect woman's comfort station and bandstand on Alamo Plaza. Address The Mayor.

struct 180,000-gallon standpipe for water-works; let contract to M. R. Gray, Columbus, Ga., to lay 1800 ft. of piping. (Lately noted inviting bids.)

Ga., Baconton.—City voted \$12,000 bonds, \$5000 being for construction water-works and electric-lighting plant; J. B. Miller, Mayor. (Lately noted to vote, etc.)

Ga., Helena.—City votes Sept. 8 on issuing \$6000 bonds to construct water-works. Address The Mayor.

Ga., Macon.—Water Comms. have plans for construction filter plant estimated to cost \$11,000; divided as follows: Building, \$4000; filters, \$4000; concrete, \$1000; will invite bids.

Ky., Hawesville.—Hawesville Water & Light Co., capital \$12,000, inctd. by W. H. Williams and associates.

La., De Ridder.—City sold \$24,000 bonds for construction water-works. Address The Mayor.

La., Whitecastle.—City voted \$25,000 bonds to construct combined water-works and electric-lighting system; Xavier A. Kramer, Engr., Magnolia, Miss. (Lately mentioned as planned, etc.)

Miss., Wesson.—City plans construction water-works and electric-light plant; engaged M. L. Culley, Engr., Jackson, Miss., to prepare plans and specifications. Address The Mayor.

Okl., Caddo.—City let contract at about \$20,000 to F. W. Keeney, Oklahoma City, to construct pumping station and filters, including two 8x10 triplex pumps, two 4-in. centrifugal pumps, two 50 H. P. oil engines, gravity filter of 250,000 gals. per day capacity, power-house, settling basin, and clear-water well; J. E. Davis, City Engr. (Bids lately noted.)

Okl., Grove.—City, W. H. Davis, Clerk, will make lately-noted water-mains and electric-light extensions; cost \$10,000; no bids; under direction of superintendent of light plant. (Lately noted.)

Okl., Jones.—City voted \$10,000 bonds for water and electric-lighting plants; Benham Engineering Co., Engr., Colcord Bldg., Oklahoma City. (Mentioned in July.)

Tenn., Henderson.—City, J. I. Galbraith, Mayor, will later advertise bids for construction waterworks, electric-light plant and sewer system; bonds lately noted voted include \$30,000 for water-works; \$13,000 for electric-light system; \$14,000 for sewers; engineer not yet employed; bonds not yet sold. (Lately noted.)

Tenn., Lenoir City.—City will vote on issuing \$10,000 bonds to complete water system. Address The Mayor.

Tex., Lockhart.—Southern Utility Co. acquired Lockhart Water-works from J. A. Bachman and others; cost \$147,000.

Tex., Lufkin.—City let contract for construction concrete wasteway and parapet to cost \$2200; plans \$20,000 expenditure for improvements and extensions to water-works. Address The Mayor.

Tex., Mineola.—City purchased Mineola Water-works Co.; will expend \$25,000 for improvements. Address The Mayor.

Tex., Port Lavaca.—City, A. A. Ames, City Secy., is prepared to grant franchise for lately-noted water-works, consisting of artesian well and pumping plant. (See Machinery Wanted—Water-works.)

Va., Farmville.—City let contract J. B. McCrary Co., Atlanta, Ga., to extend water and light system and construct sewers.

WOODWORKING PLANTS

Ala., Mobile.—Cooperage.—Tennessee Cooperage Co., Columbia, Tenn., will establish cooperage; daily capacity, 2000 bbls.

Ark., Hot Springs.—Heading and Staves.—S. H. Adams, Portland, Ind., lately reported to build stave and heading mill at Hot Springs, has not decided on location; has several Southern points under consideration.

Ark., Nettleton.—Staves.—Frisco Stave Co. of Corning, Ark. (owned by Cate-La Nieve Co., Jonesboro, Ark.), will establish lately-noted plant to manufacture tight barrel staves; daily capacity, 20,000; machinery supplied, with possible exception of drykline.

Fla., Miami.—Biscayne Novelty Works will rebuild plant reported damaged by fire; loss about \$10,000.

Ky., Glasgow.—Boxes.—Sampson Tobacco Co. will build large box factory.

Ky., Whitesburg.—Stave Mills.—Louisville Cooperage Co., Louisville, purchased timber boundary on Elk Creek; reported to install stave mills.

Va., Fredericksburg.—A. T. Quick, Lynchburg, Va., Virginia manager for Geo. C.

Brown & Co., Memphis, Tenn., will build cedar mill; has leased site for buildings and purchased machinery.

FIRE DAMAGE

Ala., Mobile.—Geo. Eberlein's residence at 1072 Spring Hill Ave.; loss about \$15,000.

Ala., Short Leaf.—W. G. Mitchell Lumber Co.'s planing mill; main office at Demopolis, Ala.

Ark., Cornish.—Equitable Powder Co.'s Mill.

Fla., Fort Meade.—C. M. Hart's residence; loss \$6000.

Fla., Miami.—Biscayne Novelty Works; loss about \$10,000.

Fla., Miami.—M. A. McDonald Lumber Co.'s plant; McCrimmon Lumber Co.'s plant; loss reported as \$100,000.

Ga., Atlanta.—Dr. Starkey's residence; loss \$6000.

Ga., Augusta.—L. Sylvester's Sons & Co.'s building; loss \$40,000.

Ga., Augusta.—Mrs. H. O. Tabb's residence on Isle of Palms.

Ga., Lagrange.—Mrs. Willie Jenkins' residence on Vernon St.; loss \$4000.

Ky., Hardin.—B. T. Cress' store; B. Lack's foundry; Gilliam Barber Shop; Stark Bldg.; Hardin Telephone Co.'s building; Gruet Lumber Co.'s warehouse; loss \$20,000.

Ky., Morganfield.—Mrs. Addie Mack's residence; J. D. Hoppood's residence.

Ky., Midway.—Opera-house, owned by Midway Realty Co., loss \$15,000; L. F. Payne's dry-goods store, loss \$9000; W. C. Morris & Co.'s drug store, loss \$6000; Bloomfield & Co.'s dry-goods store, loss \$12,000; W. A. Catrell's grocery, loss \$4500; Starks estate's building, loss \$5000; building owned by Mrs. Will Henry Johnson, Georgetown, Ky., loss \$3500; L. M. Epstein's dry-goods store, loss \$12,000; J. A. Steele's building damaged, \$500; John Wise's shoe store, loss several hundred dollars.

La., New Orleans.—Louisiana Ry. & Navigation Co.'s sheds at Cypress and Clara Sts.

Md., Andrews.—Robert L. Simmons' cannery.

Md., Arlington.—Howard Constantine's residence on Main St. near Newton Ave.; loss \$3000.

Md., Wittman.—John H. Harrison's cannery.

Miss., Brookhaven.—Bush Bros.' sawmill, several miles from Brookhaven.

Miss., Clarksdale.—Duss-Hetzler Co.'s planing mill; reported loss \$75,000.

N. C., Lumberton.—M. S. Humphrey's cotton gin, sawmill and grist mill; loss \$5000.

N. C., Robeson.—M. S. Humphrey's cotton gin, cotton mill and grist mill; loss \$5000.

N. C., Wallace.—M. W. Teachey's residence near Wallace.

N. C., Warsaw.—W. S. Wilson Co.'s planing mill.

Okl., Mulhall.—Co-operative warehouse.

S. C., Anderson.—W. Keith Glenn's 2 barns; loss \$4500 to \$5000.

S. C., Johnston.—Grady Yonce's residence.

S. C., Little Rock.—J. W. Hamer's cotton warehouse.

S. C., Williamston.—Pat Hand's residence; residence and Sadler Hotel, owned by Mr. Wallace.

Tenn., Isabella.—Ed Quinn's store, dwelling, 2 tenement-houses, barn, etc.; loss \$10,000.

Tenn., Redboiling Springs.—Donoho Hotel; loss \$12,000.

Tex., Bastrop.—E. G. Guse's building; loss \$4000.

Tex., Brownwood.—W. H. Lake's residence; loss \$3000.

Tex., Brownsville.—People's Ice & Mfg. Co.'s cotton gin.

Tex., Donna.—Donna Mercantile Co.'s store, loss \$8000; Mexican Restaurant and C. Munoz's store; loss \$3000.

Tex., Holland.—Thompson Hotel, Capt. J. M. Thompson, Propr.; loss \$10,000.

Tex., Sealy.—Haynes Mattress Co.'s engine-room.

Tex., Sherman.—Sherman Decorating Co.'s building at Travis and Jones Sts., owned by Ed. Caraway of Dallas, Tex.; loss about \$5000.

Tex., Sweetwater.—W. F. Brazell's residence, owned by V. C. Coffee.

Va., Richmond.—Home Brewing Co.'s brewery; loss \$25,000.

Va., West Point.—Victoria Hotel, owned by Mrs. M. England; loss \$3000.

COURTHOUSES

W. Va., Madison.—Boone County Commrs. opened bids to erect courthouse; are considering bids by P. Q. Shraake & Son, New Matamoras, O. (\$96,200); and Pete C. Minnotti, Logan, W. Va. (\$89,875); H. Rus Warne, Archt., Charleston, W. Va. (Lately noted.)

DWELLINGS

Ala., Bessemer.—Wm. H. H. Judson has plans by W. E. Bennis, Bessemer, to rebuild residence lately noted damaged by fire; 36x60 ft.; frame; fireproof composition shingle roof; wood floors; cost \$360; hot-air heat \$200; electric lights and gas \$80; grates in all rooms; construction under supervision of foreman.

Ala., Birmingham.—Wm. Dunn has plans by Wm. Leslie Welton, Birmingham, for residence on Chestnut Hill; 2 stories; frame. Ala., Birmingham.—Acme Building & Realty Co. will erect \$15,000 frame residence.

Ala., Birmingham.—Mrs. Lillie M. Bowman will erect 2-story brick-veneer residence; cost \$6500.

Ala., Montgomery.—G. F. Nettles will erect 2-story frame residence; cost \$3900.

Ala., Montgomery.—J. D. Wilcox will erect 1-story residence; cost \$3200.

Ark., Batesville.—Samuel M. Casey will erect dwelling in spring; brick veneer; cost about \$500.

Fla., Clearwater.—F. E. Duhme, Montreal, Canada, will erect residence.

Fla., Clearwater.—Dr. J. F. Ruff has plans by Lester Avery, Clearwater, for dwelling in Bluff View Addition; 1½ stories; 7 rooms; frame; shingle exterior; composition shingle roof; contract let soon. Address owner.

Fla., Jacksonville.—N. D. Suttles is preparing plans for 20 dwellings.

Fla., Jacksonville.—Thurston Roberts has plans by W. B. Camp, Jacksonville, to erect dwelling at Elizabeth Pl. and St. Johns Ave.; 34x50 ft.; hollow-tile outside walls; asphalt or Barrett Specification roof; hot-air heat; city electric lighting; cost \$10,000; owner will purchase materials; subcontracts for plastering and stucco, plumbing and heating. Address Mr. Camp.

Fla., Molino.—J. A. Jacobi has plans by Wm. W. Alfred, P. O. Box 271, Pensacola, Fla., for bungalow; frame; 40x80 ft.; vulcanite asphalt shingle roof; Texas wall plaster; brick mantels; plumbing; gas and electric fixtures; concrete gallery floor.

Fla., Palmetto.—A. J. Kirkwood, Chicago, is reported to erect 8-room bungalow.

Fla., Sarasota.—C. M. Higgins, Millville, N. J., is reported to erect bungalow at Indian Beach.

Fla., St. Augustine.—Chas. Juckett will erect cottage on St. Louis Ave.; foundations completed.

Fla., Trilby.—W. A. Croft will erect residence on farm near Blanton.

Ga., Americus.—S. L. Sills will erect residence on Robt. Stewart farm on Americus-Plains Highway.

Ga., Atlanta.—C. B. Meyer, Agt., will erect \$4500 residence at 53 Beecher St.

Ga., Atlanta.—W. R. Prescott is having plans prepared by Hentz & Reid, Candler Bldg., Atlanta, for dwelling; 2 stories; frame; shingle roof; hardwood floor; tile bath; vacuum vapor heat; cost about \$15,000; plans ready Sept. 30.

Ga., Columbus.—John S. Jenkins will erect residence at 1227 5th Ave.; 8 rooms; frame; metal roof; hardwood and pine floors; electricity from city plant; day labor; cost \$3700; hot-air heat \$230; materials purchased; T. F. Lockwood, Archt., Columbus. (Lately noted.)

Ga., Fort Valley.—Dr. Kinney will erect residence.

Ga., Jonesboro.—C. H. Hutcheson will erect residence; R. S. Roberts will superintend construction.

Ga., Jonesboro.—W. T. Brown will erect residence.

Ga., Marshallville.—J. C. Lee will remodel and enlarge frame residence; P. E. Dennis, Archt., American National Bank Bldg., Macon, Ga.

Ga., Marietta.—Ralph W. Northcutt will erect residence; 58x54 ft.; frame; shingle roof; hot-air heat; electric lights; cost about \$5000; contract let about Sept. 1; Wagener & Cooksey, Archts., 1208 Fourth National Bank Bldg., Atlanta, Ga. Address owner. (Lately noted.)

Ga., Manchester.—W. E. Stearns will erect residence.

Ga., Quitman.—Herbert W. Stubbs has plans by Hentz & Reid, Candler Bldg., Atlanta, for dwelling; 2 stories; frame or hollow tile; hardwood floor; tile bath; steam heat; cost about \$8000; bids being taken. (Noted in July.)

Ga., Macon.—Albert Bach is having plans prepared by Hentz & Reid, Candler Bldg., Atlanta, for dwelling; 2 stories; hollow tile and limestone; tile roof; hardwood floor; tile bath; vacuum vapor heat; cost about \$12,000; plans ready about Sept. 20.

Ky., Louisville.—Jennie C. Weller will erect stucco dwelling at 1973 Alfresco Pl.; cost \$3750.

Md., Baltimore.—Ellicott Heights Co., Jas. T. O'Neill, Pres., 608 Equitable Bldg., Baltimore, will erect 125 dwellings on street extensions to be made to Rosedale St., Luna Ave., Longwood St. and Harlem Ave.; buildings 2 stories; brick; built in blocks; cost \$1800 to \$2000 each; Geo. R. Morris, Archt., 65 Gunther Bldg., Baltimore; construction by Archt. (Noted in July.)

Md., Stevenson.—Walter Brooks, Jr., Commerce and Water Sts., Baltimore, will erect dwelling in Green Spring Valley; stone; copper roof; direct and indirect heating; electric light; cost about \$100,000; Horace Trumbauer, Archt., Philadelphia, Pa.; bids opened Aug. 31; contractors are: West Construction Co., Knickerbocker Bldg.; G. Walter Tovell, Entaw and McCulloh Sts.; Cowan Building Co., 106 W. Madison St.; Gladfelter & Chambers, 729 Roland Ave.; John F. Kunkel, 29 S. Linwood Ave.; all of Baltimore; M. W. Young, Overbrook, Pa.; Geo. F. Payne, Philadelphia, Pa. (Previously noted.)

Miss., Corinth.—Henry O. Caffey will erect residence.

Mo., Kansas City.—Willard P. Hovey of P. H. Hovey & Son purchased site at 1045 W. 54th St. and will erect dwelling.

Mo., Kansas City.—Raymond Watson of Watson, Gage & Watson purchased site at Concord Ave. and Wyandotte St. and will erect residence.

Mo., Kansas City.—J. W. Hilgeman will erect 2-story frame dwelling at 2725 Garfield Ave.; cost \$5000.

Mo., Kansas City.—J. A. Theis will erect 2-story frame dwelling at 26 W. 54th St.; cost \$7000.

Mo., Kansas City.—J. F. Burle will erect 2-story frame dwelling at 3382 Benton Blvd.; cost \$5000.

Mo., Kansas City.—Swofford Building Co. will erect 2-story frame dwelling at 950 W. 34th St.; cost \$5000.

Mo., St. Louis.—Sam Koplar will erect 3 two-story dwellings at 3551-53 and 3558 Lafayette St.; cost \$12,000; construction by owner.

Mo., St. Louis.—John T. Johnston, Supt. Hamilton-Brown Shoe Co., will erect residence under supervision of Joan C. Grenlich Realty Co., St. Louis; 10 rooms; gum interior finish; mahogany doors; exterior faced with brick and finished with Carthage stone; slate roof.

N. C., Albemarle.—Mrs. T. C. Hearne will erect residence on Main St. to be occupied by Tucker & Almond.

N. C., Blowing Rock.—Elliott Dangerfield, New York, is reported to erect \$10,000 residence.

N. C., Charlotte.—J. P. Stowe will erect residence in Colonial Heights.

N. C., Charlotte.—Julian H. Little, Esq. O. Anderson and Jeremiah Goff will erect residences in Myers Park.

N. C., Hickory.—J. C. Murphy has plans by Q. E. Herman, Hickory, for bungalow on 12th Ave.; cost \$2800.

N. C., Mooresboro.—W. B. Martin plans to erect residence; frame construction.

N. C., Wilmington.—C. F. Craft will erect 10-room residence on Orange St.

N. C., Wilmington.—J. Victor Grainger, Jr., will erect 7-room residence on Chestnut St.; cost \$3000.

N. C., Wilmington.—F. F. Pearsall will erect 8-room residence on Chestnut St.; cost \$4000.

N. C., Winston-Salem.—Dr. Edwards is having plans prepared by Mr. Keeney, Winston-Salem, for dwelling on W. 4th St.; 7 rooms.

N. C., Winston-Salem.—Ralph Walker is having plans prepared by Mr. Keeney, Winston-Salem, for dwelling at Crafton Heights.

Okla., Oklahoma City.—Stewart & Wilderson are reported to erect about 100 dwellings.

Okla., Oklahoma City.—Nichols & Chandler will erect number of dwellings.

S. C., Florence.—J. L. Wysong will erect residence on Irby and Palmetto Sts.; 2 stories; 8 rooms.

Tenn., Holladay.—C. S. Earp will erect residence; details not decided.

Tenn., Winchester.—J. N. Templeton is having plans prepared by C. A. Ferguson, Nashville, Tenn., for bungalow.

Tex., Dallas.—Wm. G. Carroll will erect residence; brick.

Tex., Dallas.—R. B. Seay, Jr., will erect residence in Munger Pl.; brick.

Tex., El Paso.—W. H. Hanford will erect 2 brick bungalows in Alamo Heights; 28x18x20 ft.; also erect garage; cost \$6000.

Tex., El Paso.—Pitts & Denning will erect brick bungalow at Kern Pl.; 29x42x20 ft.; cost \$5000.

Tex., El Paso.—W. D. Moseley will erect brick bungalow at Manhattan Heights; 31x54x20 ft.; cost \$3000.

Tex., El Paso.—W. J. Moran will erect residence on Bliss St.

Tex., El Paso.—Mayfield Building & Improvement Co. will erect brick bungalow and garage in Kern Pl.; 31½x46½x20 ft.; 3 brick bungalows in Bassett addition; 27x37x20 ft.; total cost \$16,500.

Tex., Fort Worth.—G. L. Cline will erect residence; 1 story; 6 rooms; brick; cost \$3900.

Tex., Fort Worth.—Aaron Smith will erect 2-story frame residence at 515 Fairmont St.; cost \$3000.

Tex., Fort Worth.—Edward Heurs will erect 2-story brick residence at 762 8th Ave.; cost \$6000.

Tex., Houston.—E. L. Crain & Co. will erect 7-room residence; cost \$5000.

Tex., Houston.—G. C. Evans and others will erect dwelling at Austin and Oakdale Sts.; 33x43 ft.; 2½ stories; 9 rooms and 2 baths; frame; fireproof composition shingle roof; oak and pine floors; city electric lighting; cost \$4800; no general contractor; split contracts; construction begun. Address J. W. Northrop, Jr., Archt., 701 Huntington Ave., Houston. (Lately noted.)

Tex., Menard.—Wm. Beavans is receiving bids through C. H. Leinbach, 1105 Southwestern Bldg., Dallas, to erect \$5000 dwelling.

Tex., San Antonio.—Miss Frances Brown will erect 6-room frame dwelling on Hammond Ave.; cost \$3000.

Va., East Falls Church.—Edward T. Fenwick will probably let contract to W. H. Dawson, Herndon, Va., to erect dwelling; 46x39 ft.; hollow tile; slate roof; wood floors; hot-water heat; electric lighting; cost about \$8000; Spelden & Spelden, Archts., 1403 New York Ave., Washington, D. C. Address Mr. Dawson. (Noted in July.)

Va., Leesburg.—C. F. Mead, White Post, Va., acquired portion of Beuchler Farm, about 2 miles north of Leesburg, and will erect residence.

Va., Richmond.—W. M. Martens will erect frame dwelling on Harvie St.; cost \$3300.

Va., Richmond.—Davis Bros. will erect 2-story brick dwelling on West St. between Floyd and Grove Aves.; cost \$8000.

GOVERNMENT AND STATE

Fla., Eustis.—Postoffice.—W. S. McClelland, Pres. First State Bank, will erect 2-story building; first floor for postoffice.

Fla., Palatka.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., opened bids to erect postoffice; Westchester Engineering Co., White Plains, N. Y., is lowest bidder at \$39,652 for limestone and \$42,000 for sandstone construction; plans call for 1-story and mezzanine building; 4720 sq. ft. ground area; stone and brick faced; partly fireproof; composition roof. (Noted in July.)

Md., Baltimore.—Immigration Station.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., opened bids for construction of immigration station, including pipe tunnels, approaches and wharf; 1 four-story, 40x130 ft., for hospital; 1 three-story, 150x207 ft., for receiving and detention building, and 2 two-story buildings, 50x51 ft. and 40x100 ft., for laundry and administration buildings, respectively, of fireproof construction, with slate, tile and composition roofs; brick faced; stone base; stone and terra-cotta trimmings; approximately 43,000 sq. ft. total ground area; wharf 25x260 ft.; wood construction; Wm. Dall Co., Cleveland, O., is lowest bidder at \$267,688 for construction complete, except wharf, elevators and mechanical equipment; Norcross Bros. Co., Worcester, Mass., at \$6000 for wharf; Standard Plunger Elevator Co., Worcester, Mass., at \$10,950 for elevators; W. G. Cornell Co., Washington, D. C., at \$87,584 for mechanical equipment. (Noted in August.)

N. C., Wilmington.—Custom-house.—Treasury Dept., Jas. A. Wetmore, Acting Super-

vising Archt., Washington, D. C., is reported to open bids Oct. 9 to erect \$600,000 custom-house; 330 ft. long; 2 wings connected by long hall in rear; elevators.

Okla., Blackwell.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., opened bids to erect postoffice; Potter Lumber Co., East Liverpool, O., is lowest bidder at \$40,000 for sandstone construction, and Algernon Blair, Montgomery, Ala., lowest bidder at \$36,441 for limestone construction; 2 stories and basement; ordinary construction; stone and stucco facing; 4045 sq. ft. ground area. (Lately noted.)

Tex., San Antonio.—Federal.—Postmaster Armistead receives bids until Sept. 15 to repair Federal building; information from postmaster.

HOSPITALS, SANITARIUMS, ETC.

Ky., Ashland.—Whatsoever Circle, King's Daughters, Mrs. Edw. Crawford, Pres., 306 E. Winchester Ave., plans to erect hospital; accommodations for 45 patients; brick construction; cost about \$25,000; James M. King, Archt., Ashland.

N. C., Winston-Salem.—Twin-City Hospital Assn. will erect nurses' home; cost \$6000 to \$8000.

S. C., Leesville.—Drs. W. P. Timmerman and R. H. Timmerman of Batesburg, S. C., and J. C. Nicholson and Jas. P. Drafts of Leesville organized Leesville Hospital and will erect building; construction begun.

HOTELS

Fla., Clearwater.—Jas. Hamilton will erect business block and may arrange portion for hotel. (See Stores.)

Fla., Clearwater.—W. T. Harrison is having plans prepared for 4 or 5-story building for offices or hotel. (See Stores.)

Ga., Flowery Branch.—Eli Carlsile will erect store and hotel building. (See Stores.)

Ky., Buskirk (not a P. O.).—R. W. Buskirk, Matewan, W. Va., indefinitely postponed erection of hotel. (Noted in April.)

S. C., Edgefield.—Mrs. Hattie Adams will remodel upper floors of Adams store buildings for hotel; about 20 rooms.

MISCELLANEOUS

Fla., Eustis.—Postoffice.—W. S. McClelland will erect building for postoffice. (See Government and State.)

Ga., Butler.—Fair.—Taylor County Fair Assn., Ira Chambliss, Secy., will erect exhibit hall 40x60 ft., hog, cattle and poultry pens; wood construction; Carver's tile roofing; day labor; lately noted. (See Machinery Wanted—Electric Plant.)

Ga., Griffin.—Clubhouse.—Griffin Country Club will erect clubhouse, provide lake, golf links, tennis courts, automobile course, etc.

Tenn., Chattanooga.—Clubhouse.—Ellsworth Wilson, Athens, Tenn., Chrmn.; J. A. Holston, Rogersville, Tenn., and H. O. Ekel, Sevierville, Tenn., are committee to investigate feasibility of erecting clubhouse on Signal Mountain, near Chattanooga, for newspaper men; contemplate \$5000 building; details not determined.

Tenn., Nashville.—Memorial.—S. A. Cunningham Memorial Com. plans to erect fireproof memorial building.

Tenn., Nashville.—Laboratory.—Dr. Geo. White and others are having plans prepared by C. A. Ferguson, Nashville, to erect biological laboratory building.

Tex., Galveston.—Bathhouses.—A. Shafer is reported to rebuild bathhouses at Murdoch's damaged by storm.

Tex., Galveston.—Bathhouses.—J. E. Pearce is reported to rebuild bathhouses at The Breakers damaged by storm.

Tex., Waco.—Grandstand.—S. N. Mayfield, Secy. of Texas Cotton Palace Assn., receives bids until Sept. 6 to furnish material and erect grandstand; plans and specifications at office of Milton W. Scott & Co., Archts., Waco. (Lately noted.)

RAILWAY STATIONS, SHEDS, ETC.

Ga., Royston.—Southern Ry. Co., W. H. Wells, Chief Engr. Constr., Washington, D. C., is receiving bids to erect frame depot to replace burned structure; separate waiting-rooms for white and colored passengers, offices, freight and baggage-rooms, etc. (Lately noted.)

Okla., Sparks.—Fort Smith & Western R. R., A. L. Mills, Gen. Mgr., Fort Smith, Ark., will erect depot.

Tenn., Memphis.—Illinois Central R. R. A. S. Baldwin, Ch. Engr., Chicago, and 7 other railroads leased portion of Old Fellows Bldg., Main St. and Court Ave.; building

will be remodeled under supervision of Geo. Weller, Archt., Memphis; cost about \$30,000. (Noted in April.)

Tex., Amarillo.—Atchison, Topeka & Santa Fe Ry., F. C. Fox, Gen. Mgr. Western Lines, Amarillo, will erect addition to office building to cost \$35,000 and fireproof record building to cost \$6000.

SCHOOLS

Ala., Chatham.—State High School Comm., Montgomery, selected Chatham as location for Washington County High School; town donated site and agreed to erect building to cost not less than \$10,000; W. F. Feagin, State Supt. Education, Montgomery, is member of commission.

Ala., Montevallo.—Alabama Girls' Technical Institute, T. W. Palmer, Pres., has plans by W. T. Warren, Empire Bldg., Birmingham, for extension to gymnasium; 60x30 ft.; brick; tar and gravel roof; cost, with out equipment, \$2500; day labor. (Lately noted to expend \$100,000 for buildings.)

Ala., Normal.—Agricultural and Mechanical College is having plans prepared by W. A. Bayfield & Co., P. O. Box 649, Birmingham, Ala., for 2 dormitories; each 40x55 ft.; ordinary construction; red tile roof; pine floor; steam heat; electric light; cost \$30,000. Address Archt. (See Machinery Wanted—Tile, Roofing; Fire Escape Door Devices.)

Fla., Clearwater.—Trustees receive bids about Sept. 17 to erect school building in northern section; 64x77 ft.; 2 stories; brick; asbestos fireproof roof; 8 rooms, exclusive of basement; accommodate 375 pupils; hot-water heat; cost about \$10,000; Lester Avery, Archt., Clearwater. (Noted in July.)

Fla., Curlew (not a postoffice).—See Fla., Orona.

Fla., Daytona.—City is having plans prepared by Mark & Sheftall, Daytona, for 3 school buildings; 5 or 6 rooms each. (Lately noted to have voted bonds.)

Fla., Green Springs.—Board of Public Instruction, Dixie M. Hollis, County Supt., Clearwater, Fla., has plans by Lester Avery, Clearwater, for school building; 3 stories; 58x75 ft.; red brick; first floor cement. (Noted in June.)

Fla., Orona.—Special School Tax Dist. No. 10 voted \$12,000 bonds to erect \$4000 school building at Orona, \$5000 building at Curlew and \$3000 building at Walls Springs. Address Dist. School Trustees. (Noted in August.)

Fla., Pomona.—Board of Public Instruction, H. W. Lewis, Supt., West Palm Beach, Fla., opens bids Sept. 11 to erect school building; cement block; cost about \$10,000; E. V. Lewis, Archt., Miami, Fla. (Lately noted.)

Fla., Wall Springs.—See Fla., Orona.

Fla., West Palm Beach.—Special Tax School Dist. No. 9 votes Sept. 14 on \$4000 bonds to erect school building; H. W. Lewis, Secy. Board of Public Instruction. (Noted in August.)

Ga., Athens.—City, J. W. Barnett, Engr., will remodel building on grounds of high school.

Ga., Beaufort.—City voted \$12,000 bonds, including \$550 to erect school building; J. B. Miller, Mayor. (Lately noted.)

Ga., Rhine.—R. E. Saye will erect \$4000 school; day labor.

Ky., Georgetown.—City will probably vote Nov. 3 on bonds for schools; J. C. Waller, Supt. of Schools.

La., Lake Charles.—City is considering voting on special maintenance tax and special tax to secure \$125,000 bonds to erect high school; E. F. Gayle, Pres. School Board.

Md., Baltimore.—City will remodel old State Normal School building, Lafayette and Carrollton Aves., for training school for white teachers; James H. Preston, Mayor.

Miss., Clinton.—Clinton School Dist. is considering election on \$12,000 to \$15,000 bonds to erect school building; Frank Greaves, Trustee.

Miss., Macon.—Noxubee county voted \$25,000 bonds to erect and equip school building. (Center Point School Dist. lately noted voting \$4000 bonds.)

Miss., Meridian.—Board of Supvrs. will consider Sept. 8 petition of Lauderdale County Farmers' Co-operative Assn. for \$100,000 bond issue to erect agricultural high school.

Mo., Webster Groves.—Barnett, Haynes & Barnett, Century Bldg., St. Louis, prepared plans and are reported to have opened bids to erect building for Loretto College; 250x200 ft.; 3 stories; 12 classrooms, science hall, chemical, physical and biological laboratories, etc.; cost \$250,000.

Okla., Copan.—Board of Education will erect school building; 2 stories and basement; 50x76 ft.; reinforced concrete and brick; concrete floors; gas lighting; cost \$20,000; steam heat about \$3000; C. A. Henderson, Archt., Coffeyville, Kan.; bids opened Aug. 28. Address Board. (Lately noted.)

S. C., Columbia.—Secy. of School Board opens bids Sept. 8 to erect high school; separate bids for building, heating and ventilating and plumbing; fireproof construction up to ceiling of second story, which will be standard wood construction with metal roof covering; exterior rough texture brick and limestone trimmings. Address Urquhart & Johnson, Archts., Palmetto Bldg., Columbia. (Lately noted.)

S. C., Orangeburg.—W. B. Thompson, Chrmn. Board Trustees, Orangeburg, lets contract Sept. 10 (extended date) to erect school building on Sellers Ave.; 119x55 ft.; ordinary construction; Barrett specification roof; joist floor construction; steel stairs; air blast, fan-driven heating; electric light; cost about \$20,000; F. H. & J. G. Cunningham, Archts., Greenville, S. C. (Lately noted.)

S. C., Sumter.—A. D. Harby, Chrmn., receives bids until Sept. 8 to erect 2-story-and-basement girls' high school and for furnace-blast heating and ventilation; plans and specifications at office of J. Herbert Johnson, Archt., Sumter; Lorick Bros., Columbia, S. C.; N. Gaillard Walker, Archt., Rock Hill, S. C.; 65x120 ft.; ordinary brick and tile construction; tin and slate roof; electric lighting; cost about \$28,000. (Noted in July.)

Tenn., Chattanooga.—Mountain Land Co., C. E. James and others, will erect school on Signal Mountain; brick construction.

Tenn., Memphis.—Shelby County Industrial and Training School will erect girls' school; considering site near Cedar Grove and one near Raleigh; Mrs. Rebbe Metcalf McNeill, Pres.

Tenn., Sweetwater.—City votes Sept. 30 on \$15,000 bonds, to include \$10,000 for schools. Address The Mayor. (Noted in July.)

Tex., Denton.—Regents of College of Industrial Arts receive bids addressed to F. M. Bralley, Pres. of college, until Sept. 3 to erect fireproof addition and alter main building; plans and specifications at office of Prest. Bralley, Denton, and Endress & Watkins, Archts., Austin and Houston, Tex.

Tex., El Paso.—School Board will call for bids to complete high school, for which Jos. E. Morgan, 209 N. Kansas St., El Paso, has contract for concrete skeleton work; plans by Trost & Trost, El Paso, call for reinforced concrete structure; concrete and Barrett Specification roof; \$80,000 hot-blast heating plant; cost \$500,000 without mechanical equipment. (Previously noted.)

Tex., Houston.—P. W. Horn, Supt. of Schools, receives bids until Sept. 7 to erect Harper School on block 10 of John Brashear Addition; plans and specifications by city architect at office of Mr. Horn.

Tex., Lytle.—School Board will erect school building; brick; tin roof; wood floors; cost \$8000; Lytle Ind. School Dist. voted \$12,000 bonds. Address A. E. Hester, Lytle. (Lately noted.)

Tex., Menard.—School Board will not let contract to erect school building until April, 1916; 2 stories and basement; C. H. Leinbach, 1105 Southwestern Bldg., Dallas, and Albert Nowild, Menard, Archts. (Lately noted to receive bids until Aug. 23.)

Tex., Sabinal.—S. O. Hart, Secy. Trio 2d School Dist., opened bids Aug. 25 to erect lately-noted high-school building at Live Oak School, 8 mi. north of Sabinal; 2 stories; 30x56 ft.; brick; metal or cedar shingle roof; 1st floor cement; 2d, wood; cost about \$5000; Uneda Bridge Co., Archt., Austin. Address Mr. Hart. (See Machinery Wanted—School Furniture, etc.)

Tex., San Angelo.—School Board lets contract Sept. 6 to erect high school; about 80x120 ft.; brick; gravel roof; wood and concrete floors; steam heat; electric lights; cost \$50,000; Ross & Cason, Archts., Waco, Tex. Address W. P. Mengies, Secy. of board. (Lately noted.)

Va., Suffolk.—City Council is considering \$70,000 bond issue for fire department, sewers, streets and schools. Address The Mayor.

W. Va., Bluefield.—C. R. Murray, Supt. of Schools, receives bids until Sept. 7 to erect graded school in South Bluefield; 140x140 ft.; brick; slow-burning construction; Barrett roof; maple floors; steam heat; electric lighting; cost \$50,000; plans and specifications at office of Pedigo & Gary, Archts.,

Kelley & Moyer Bldg., Bluefield. Address Mr. Murray.

W. Va., Brownsville (not a P. O.).—Board of Education of Courthouse Dist., Lewis county, John Kaden, Secy., Roanoke, W. Va., receives bids until Sept. 4 to erect 2-room school at Brownsville; plans and specification at office of Sheriff, Weston, W. Va.; will also erect 2-room school at Copley.

W. Va., Spencer.—Independent School Dist. will erect \$30,500 high school and expend \$4500 to install heating and ventilating plant in graded school. Address Dist. School Trustees.

W. Va., West Liberty.—State Board of Control, Jas. S. Lakin, Pres., Charleston, W. Va., will have plans prepared in winter for school to be erected next spring on recently acquired 100-acre tract. (Lately noted.)

W. Va., Weston.—Board of Education of Skin Dist., Lewis county, Geo. H. Corathers, Secy., R. D. No. 3, Weston, receives bids until Sept. 11 to erect school on site of old Bett Schoolhouse Subdistrict No. 3; plans and specifications at Sheriff's office, Weston, W. Va.

STORES

Ala., Birmingham.—Mrs. C. E. McCoy will erect 2-story brick building on 2d Alley between 19th and 20th Sts.; cost \$3600.

Ala., Birmingham.—J. Minikins will remodel store building; install show windows, redecorate, install new fixtures, etc.

Ala., Decatur.—T. M. Dix will erect store building.

Ala., Demopolis.—John C. Webb will erect building at Strawberry and Washington Sts. to replace previously burned structure.

Ala., Jasper.—Cranford Mercantile Co. will erect store building; 75x120 ft.; construction under supervision of J. A. Smith.

Fla., Clearwater.—W. T. Harrison is having plans prepared by Lester Avery, Clearwater, for improvements on Cleveland St., to include 2-story store and 4 or 5-story office or hotel building.

Fla., Clearwater.—Jas. Hamilton has plans by Lester Avery, Clearwater, for business block on Cleveland St.; 4 storerooms and arcade on first floor; second story to contain offices and may be arranged for hotel; bids opened in about week.

Fla., Jacksonville.—J. Weinstein will erect 2-story brick building on Davis St.; cost \$3000.

Ga., Atlanta.—J. W. Ware will erect store building on Mayson and Turner Ave. and L. & N. Belt Line; brick; cost \$4500; day labor.

Ga., Atlanta.—E. W. McClure leased first floor of Elsmar Bldg., 9-11 Whitehall St., to F. W. Woolworth Co., New York, and will expend \$20,000 to remodel; will also expend \$10,000 to remodel other portions of same building, also remodel and improve buildings for own use at Whitehall and Hunter Sts. and Broad and Hunter Sts. (Lately noted to expend \$3000 to remodel building.)

Ga., Flowery Branch.—Eli Carlisle will erect 2-story brick business building; 85x100 ft.; 2 stores on first floor; upper floor for hotel.

Mo., Kansas City.—Max Eichenberg is reported to erect business building on 8th St.; cost \$25,000.

Mo., St. Louis.—G. Anderson will erect 2-story building at 5112 N. Market St.; cost \$3500; construction by owner.

N. C., Wilson.—J. & D. Oettinger are having plans prepared by M. S. Rich, 1301 H St. N. W., Washington, D. C., to remodel build-

ing for department store; 100x75 ft.; 2 stories; brick and steel; maple floors; electric passenger elevator; cost \$15,000; construction to begin about Feb. 1; address architect. (Noted in August.)

Okla., Oklahoma City.—Kerr Dry Goods Co., Geo. G. Kerr, Pres. and Mgr., leased 6-story-and-basement building at Main St. and Harvey Ave. and will remodel, install front of plate glass, etc.

Okla., Oklahoma City.—Classen Co. plans to erect two 2-story buildings at 204 and 208 E. 13th St.; 2 stories; one of wood; other of brick-veneer; cost \$3000 each.

Okla., Oklahoma City.—Fred H. Fitch will remodel 2-story brick building at 1400 W. Main St.; cost \$3500.

Tenn., Wartrace.—Dr. Syd Houston purchased 3 lots and is reported contemplating erection of business buildings.

Tex., San Antonio.—Dalkowitz Bros. will erect 2-story concrete fireproof store building on Military Plaza; cost \$20,000.

Va., Richmond.—Dr. C. A. Labenberg will erect 5 two-story brick stores on Adams St. between Broad and Grace Sts.; cost \$9000.

THEATERS

Ky., Midway.—Midway Realty Co. will rebuild opera-house reported burned at loss of \$15,000.

Mo., St. Louis.—St. Louis Artists' Guild contemplates enlarging offices and erecting theater to seat 300; cost about \$12,000.

N. C., Ayden.—Lorenzo McLawhorn will erect opera-house or hall on Railroad St.

WAREHOUSES

Fla., Eustis.—G. D. Clifford prepared plans for storeroom for Lake Transfer Co. at foot of MacDonalds Ave.

Fla., Orlando.—Dickson & Ives will erect warehouse.

Ky., Paris.—Paris Tobacco Warehouse Co. Incptd. with capital stock of \$65,000; will erect warehouse.

Miss., Jackson.—E. I. du Pont de Nemours Powder Co., Wilmington, E. Craig, representative, Senatobia, Miss., will erect powder-storage depot about 2 miles south of Jackson, consisting of several structures of metal and brick construction.

N. C., Hickory.—A. A. Shuford Mill Co. will erect 2 brick warehouses at Highland Mill; 50x100 ft. and 50x200 ft.

N. C., Statesville.—D. F. Jenkins will erect brick building 40x60 ft. on Center St. to be occupied by Statesville Oil Co., of which J. P. Flanagan is Mgr.

N. C., Walnut Cove.—Dr. J. W. Slate has plans for tobacco storage and packing house.

Okla., Tulsa.—M. C. Hale has plans by J. P. Curtin, Tulsa, to erect warehouse; 70x120 ft.; 2 stories; brick and concrete; prepared roofing; concrete and wood floors; freight elevator; cost \$10,000; construction by owner. (Lately noted.)

S. C., Charleston.—Mutual Compress & Warehouse Co. organized with \$100,000 capital stock by C. F. Middleton, Findley & Hasell and others; will establish cotton-exporting plant on Cooper River; plans include warehouse with capacity of 15,000 to 20,000 bales, etc.

S. C., Lexington.—Alfred J. Fox is promoting erection of cotton warehouse.

Tex., El Paso.—John Mulligan will erect warehouse at Mills and Campbell Sts.; 3 stories; brick; fireproof; cost \$65,000.

Tex., Palestine.—Company organized to erect warehouse to be in charge of Walter McInnis.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Ark., Little Rock.—R. W. Rightsell let contract to erect business and apartment building. (See Stores.)

Fla., St. Cloud.—J. K. Conn is reported to have let contract to erect apartment and store building. (See Stores.)

Ga., Atlanta.—Farrell Heating & Plumbing Co. has contract to install heating plant in Blairstone Apartments at Peachtree and 4th Sts.; cost \$12,272.

Md., Brunswick.—John E. Meadows let contract to erect flat and store building. (See Stores.)

Mo., St. Louis.—Mary C. Myers let contract to H. Kissell & Son, St. Louis, to erect 2-story tenement-house at 2219 Fair Ave.; cost \$4300.

Mo., St. Louis.—Theo. Voelker let contract to J. Chapman, St. Louis, to erect 2-story

tenement-house at 2207 Adelaid St.; cost \$4950.

Mo., St. Louis.—Wm. Cuba let contract to Wm. Cuba Building & Contracting Co., St. Louis, to erect 3 two-story tenement-houses at 3737-39-41 Hydraulic St.; cost \$9000.

N. C., Roanoke Rapids.—M. A. Daniel let contract to erect building for flats, store and moving-picture theater. (See Stores.)

Tenn., Memphis.—S. Bronstein is reported to have let contract to J. E. Wright, Memphis, to erect 2-story 12-room brick flat; cost \$4000.

Tex., Abilene.—Mrs. Anna D'Spain let contract to Jeff B. Fagan, Abilene, to erect apartment-house; 2 stories; 46x89 ft.; 8 apartments; frame; tar and gravel roof; cost about \$7000; M. L. Waller & Co., Archts., Abilene and Fort Worth. (Noted in April.)

Va., Portsmouth.—Mrs. M. E. Nichols let contract to J. A. Duval, Portsmouth, to con-

vert residence at North and Hatton Sts. into four 5-room apartments; frame; \$700 low-pressure steam heat; gas and electric light; cost \$3000. Address Contr.

ASSOCIATION AND FRATERNAL

Ala., Ensley.—Ensley Lodge, B. P. O. E., let contract to E. R. Maynard, Ensley, to remodel lodge building; also let contract to Mason & Dullon for plumbing; Barbour Plumbing Co., electric wiring and lights, and Geo. R. Lum, heating; cost \$2500; Wm. Leslie Welton, Archt., Birmingham.

Fla., Jacksonville.—B. P. O. E. is reported to have let contract to Buckland & Fletcher, Jacksonville, to erect addition to building at Adams and Laura Sts.; 2 stories; brick and hollow tile; cost \$3000.

W. Va., Parkersburg.—C. T. Heteshew and W. W. Walker let contract to erect building for lodge, store and offices. (See Stores.)

BANK AND OFFICE

N. C., Ayden.—Farmers and Merchants' National Bank let contract to Southern Building Co., Goldsboro, N. C., to erect bank building; 3 stories and basement; 25x50 ft.; composition roof; steam heat; indirect lighting; terra-cotta, tile and stone trim; cost about \$13,000; Henton & Moore, Archts., Wilson, N. C. (Noted in July.)

Okla., Sand Springs.—C. Page, Tulsa, let contract to Bradley & Boydell, 16 Nebraska Bldg., Tulsa, to erect bank building on Main St.; 140x25 ft.; ordinary construction; 5-ply Barrett roofing; concrete floors; cement sidewalks; cost \$12,000; A. Ikenfeld, Archt., First National Bank Bldg., Tulsa.

S. C., Saluda.—Bank of Saluda let contract to R. C. Able to erect building at Main and Church Sts.; 2 stories; 23x100 ft.; brick construction with press-brick front; tin roof; cement and tile floor first story; wood above; stoves; electric lighting; metal ceiling for lower story; wood ceiling above; Talley & Summer, Archts., Greenwood, S. C. (Noted in Aug.)

W. Va., Parkersburg.—C. T. Heteshew and W. W. Walker let contract to erect building for offices, store and lodge. (See Stores.)

CHURCHES

Ga., Macon.—Mulberry Street Methodist Church let contract to W. D. DeHaven, Macon, to erect annex to building; brick; 1 story and basement; cost \$4500; P. E. Dennis, Archt., Macon. (Lately noted.)

Mo., Hannibal.—St. Johns Evangelical Lutheran Church let contract to erect school building. (See Schools.)

Mo., Kansas City.—Church of the Visitation let contract to erect building; 112x56 ft.; brick and stone; cost \$50,000; Owen & Payson, Archts., Scarritt Bldg., Kansas City. (Noted in Aug.)

Tex., Winters.—Baptist Church let contract to C. A. Young, Sherman, Tex., to erect building; 65x65 ft.; brick walls; tar and gravel roof; wood floors; electric lights; cost \$12,000; D. S. Castle, Archt., Abilene, Tex. Address Contr. at Sherman or Winters. (Lately noted.)

Va., Albemarle.—Bethel M. E. Church let contract to Herbert Walthall, Albemarle, to erect building; 90x60 ft.; frame; wood floor; hot-air heat; cost \$5000; J. W. McDaniel, Archt., Blackstone, Va. Address Contr. (Lately noted.)

CITY AND COUNTY

Tenn., Lexington.—Jail.—Henderson County Commrs. let contract to Edgar Parish, Jackson, Tenn., to erect jail; cost \$6140. (Lately noted.)

Tenn., Nashville.—Asylum.—Davidson County Commission, John F. Gaffney, Chrmn., let contract to Foy-Practor Co., Nashville, to erect 2 wings to insane department of County Asylum; 40x105 ft.; reinforced concrete; slate roof; heat from present plant; floors of slab construction; windows to have steel frames set in steel facings; cost \$70,500; Edw. E. Dougherty, Archt., Candler Bldg., Atlanta. (Previously noted.)

Tex., Temple.—Fire Stations.—City let contract to Smith & Petzold, Waco, Tex., to erect 2 auxiliary fire stations; cost \$15,000. (Noted in Aug.)

Va., Richmond.—Engine-house.—City let contract to E. C. Woodward, Richmond, to erect bungalow type engine-house at 30th and Bainbridge Sts.; cost about \$9000; 80x60 ft.; brick and frame; slate roof; concrete and wood floors; electric lighting; Carneal

& Johnston, Archts., Chamber of Commerce Bldg., Richmond. (Lately noted.)

Va., Roanoke.—Jail.—City will let contract to Pauley Jail Building Co., St. Louis, for jail equipment in city hall now under construction, and for which King Lumber Co., Charlottesville, Va., is general contractor; Frye & Chesterman, Archts., Roanoke. (Previously noted.)

COURTHOUSES

Ky., Lawrenceburg.—A. J. Stair, 2308 E. Jackson Ave., Knoxville, Tenn., general contractor to erect courthouse, let following subcontracts: Tin, slate roof and cornice work, John Cruze; marble, Victoria Marble Co.; both of Knoxville; structural steel, Chattanooga Roofing & Foundry Co., Chattanooga; brick, concrete, plastering, painting and glazing and carpenter work, Capital Lumber Co.; plumbing, Chas. Whitehead; both of Frankfort, Ky.; will probably let contract for terrazzo floors and setting interior marble trimming to Jos. Bereta, Knoxville; excavating, stone work, incidental work, etc., under supervision of L. C. Powers, Gen. Supt.; S. M. Ogle, foreman in charge; plans by Joseph & Joseph, Louisville, Ky., call for structure to cost about \$40,000. (Other contracts noted in July.)

DWELLINGS

Ala., Birmingham.—W. A. J. Kopps let contract to Joe Ward, Birmingham, to erect 2-story frame residence; Salle & Mewhinney, Archts., Birmingham.

Ala., Birmingham.—T. J. Crittenden let contract to E. A. Smith, Birmingham, to erect bungalow on Tuscaloosa Ave., West End; 7 rooms; frame; compo-shingle roof; hardwood floors; hot-air heat; electric lights; cost \$2600; J. G. Ringer, Archt., Birmingham. (Noted in June.)

Ala., Bon Air.—Danville Knitting Mills let contract to O'Dell & Tritt, Birmingham, Ala., to erect 2-story frame residence; Salle & Mewhinney, Archts., Birmingham. (Lately noted.)

Ala., Birmingham.—Ed E. Robinson let contract to Miller Bros., Birmingham, to erect bungalow; Bem Price, Archt., Birmingham. (Lately noted.)

Fla., Starke.—A. J. McKinney will erect dwelling and store building at 10th and Cherry Sts.; 2 stories; will also erect barn; Fred Chase, Contr.

Fla., Tampa.—Sol Maas let contract to J. S. Sweet, Tampa, to erect \$4000 residence on S. Dakota Ave.; Thornton Maas, Archt., Tampa, and Atlanta, Ga.

Ga., Augusta.—Dr. W. C. Lyle has plans by and let contract to C. M. Tripp, Harrison Bldg., Augusta, to erect dwelling; 47x42 ft.; brick veneer; tile or cypress shingle roof; hardwood floors; cost \$9500; steam heat, \$575. Address Contr. (Lately noted.)

Ga., Atlanta.—Robt. Crumley will erect 2-story brick-veneer residence; cost \$6500; S. J. Warner, Contr., Atlanta. (Lately noted.)

Ga., Fitzgerald.—Fitzgerald Cotton Mills let contract to G. W. Howze to erect 30 additional cottages.

Ky., Ashland.—Wm. Meade let contract to Davis & Pelphrey, Ashland, to erect dwelling; 36x40 ft.; brick and stone; slate roof; hot-water heat; electric light; W. B. Smith, Archt., Huntington, W. Va.

Md., Baltimore.—J. S. Murray let contract to Edward Brady & Sons, 1113 Cathedral St., Baltimore, to erect dwelling at Guilford; James R. Edmunds, Archt., Keyser Bldg., Baltimore.

Md., Baltimore.—Miss Bessie I. Kelly let contract to J. Henry Smith, 1426 Light St., Baltimore, to erect dwelling on Edmondson Ave., Ten Hills; 2 stories; 30x45 ft.; terra-cotta hollow tile; slate roof; hardwood floor; hot-water heat; electric light; cost \$8000; Clyde N. Friz, Archt., Munsey Bldg., Baltimore.

Md., Frederick.—C. E. Cline let contract to Hahn & Betson, Frederick, to erect 8 semi-detached dwellings on E. 3d St.; brick; 2 stories; tin roof; 6 rooms, bath and pantry; front and back porches; Kepner & Smith, Archts., Frederick.

Md., Glen Arm.—Jos. G. Reynolds, 833 Park Ave., Baltimore, Md., let contract to Henry A. Knott, 1340 N. Eden St., Baltimore, to erect residence at Long Green, R. D. No. 2; 2½ stories; brick; 42x49 ft.; slate roof; wood, concrete and tile floors; cost \$14,000; G. Murray Myers, Archt. Address contractor. (Lately noted.)

Md., Worton.—Mrs. N. B. Costello Worton, is reported to have let contract to W. S. & A. M. Culp, Chestertown, Md., to erect

dwelling; 2½ stories; brick; 47x85 ft.; E. B. Gilchrist, Archt., Harrison Bldg., Philadelphia, Pa.

Miss., Clarksdale.—H. H. Hapson let contract to H. L. Mard, Clarksdale, to erect residence; 40x60 ft.; frame, metal lath and stucco construction; tye-like asphalt shingle roof; wood floors; brick foundation; hot-air heat; electric wiring; cement floor; cost \$3000; J. M. Bramlett, Archt., Clarksdale.

Mo., St. Louis.—R. Agartin let contract to J. H. Williamson, St. Louis, to erect 2-story dwelling at 5233 Waterman Ave.; cost \$5000.

Mo., St. Louis.—F. H. Schiefelbein let contract to H. Thielker, St. Louis, to erect 2-story dwelling at 917 Wilmington Rd.; cost \$3000.

N. C., Mooresboro.—Y. L. McCordwell let contract to erect bungalow; 6 rooms; Hook & Rogers, Archts., Charlotte, N. C.; probably install private electric-light equipment and water pump.

N. C., Winston-Salem.—Joe Vaughn, Jr., let contract to E. B. Newkirk, Winston-Salem, to erect residence at Vistage Ave. and Park Blvd.; English style; bungalow type; cost \$3000; Humphreys & Faw, Archts., Winston-Salem.

N. C., Winston-Salem.—L. S. Lloyd let contract to J. H. Grubbs, Winston-Salem, to erect 10-room residence on Kernersville Rd.; cost about \$4000.

Okla., Tulsa.—T. J. Hartman let contract to R. E. Mongrum, Tulsa, to erect rent bungalows and residence on Admiral and Denver Sts.; bungalows 26x32 ft.; pine floor; cost \$1500 each; residence 36x48 ft.; hardwood floor; cost \$10,000; all frame; shingle roof; hot-water heat; electric light; Blair Bros., Archts., Tulsa. Address Contr. (Lately noted.)

Tenn., Chattanooga.—P. G. Stauffer let contract to R. I. Ward, Chattanooga, to erect residence on Missionary Ridge; brick and stucco; asphalt shingle roof; cement floors; oak finish; furnace heat; also erect garage; cost \$5000.

Tex., Corsicana.—Robt. Jarrett let contract to Frank Haslam, Corsicana, to remodel residence, erect garage and servants' quarters, etc.; Horne & Blanding, Archts., Corsicana.

Tex., El Paso.—C. H. Leavall let contract to Geo. W. Sharp, El Paso, to erect 5-room bungalow on San Diego St.; cost \$3000.

Tex., El Paso.—Tom Courchesne let contract to erect 6-room residence on Happer St.

Tex., Houston.—Geo. Howard let contract to erect dwelling at Branard St. and Roseland Ave.; 2 stories; 8 rooms.

Tex., Houston.—J. W. Northrop, Jr., 701 Huntington Ave., Houston, prepared plans and let contract to erect dwelling at Mt. Vernon and Westheimer Rd. for Tom Randolph, Jr.; 7 rooms; bungalow type; frame; fireproof composition shingle roof; cost \$4000. (Lately noted.)

Va., Fredericksburg.—Jas. R. Hicks let contract to F. G. Hefflin, Fredericksburg, to erect residence.

Va., Petersburg.—Robt. W. Price let contract to E. L. Ban, Petersburg, to erect brick residence on Walnut Hill.

Va., Roanoke.—Lawson Worrell, Bluefield, W. Va., let contract to B. L. Lucas & Co., North Fork, W. Va., to erect \$10,000 residence on Raleigh Court; H. M. Miller, Archt., Roanoke.

W. Va., Huntington.—Mrs. M. Y. Hayes let contract to Geo. Schmauch, Huntington, to erect residence; 2 stories; 30x45 ft.; press brick; slate roof; hot-water heat; electric lights; cost \$5000; A. F. Dickey, Archt., Huntington. (Lately noted.)

GOVERNMENT AND STATE

D. C., Washington.—Office Building.—John H. Parker Co., 315 4th Ave., New York, general contractor to erect office building for Dept. of Interior at cost of \$1,622,487 and of about 680,000 sq. ft. floor space, let contract for 6300 tons steel work to Riter-Conley Mfg. Co., Pittsburgh, Pa. (Lately noted.)

Okla., Oklahoma City.—Capitol.—State Capitol Com. let contract to Jas. Stewart & Co., P. O. Box 797, Oklahoma City, home office, New York, to erect State Capitol building; 5 stories and basement; 420x150 ft., with wings about 85x85 ft.; fireproof; exterior of Oklahoma granite first 2 stories; Bedford limestone above; copper and tile roof; reinforced concrete floor; 4 elevators to be purchased; cost \$1,500,000; Layton & Smith, Archts., Majestic Bldg., Oklahoma City. (Noted in July.)

Tenn., Ashland City.—Postoffice.—Hugh Dozier let contract to Slayden & McNabb, Waverly, Tenn., to erect building for postoffice; 22x77 ft.; brick; Carey roofing; heat and light from private plant; cost, without equipment \$2700; R. E. Turbeville, Archt., Nashville, Tenn.

Tex., Austin.—Asylum.—State let contract to J. C. Eade, Austin, to erect carpenter and blacksmith shop and additions and repairs at State Insane Asylum; 60x80 ft.; brick, steel and concrete; galvanized-iron roof; concrete floors; cost \$17,000; C. H. Page & Bro., Archts., Austin. (Lately noted.)

Tex., Longview.—Postoffice.—Treasury Department, Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., let contract at \$38,790 to Geo. A. Shaul, Seneca, Kan., to erect postoffice. (Contract lately noted let was revoked.)

HOSPITALS, SANITARIUMS, ETC.

Mo., Kansas City.—St. Joseph's Hospital let contract to Fuller Construction Co., Kansas City, to erect hospital building at Linwood and Prospect Aves.; 167,000 sq. ft. floor space; fireproof; brick and terra-cotta trim; composition roof; concrete and clay tile floor; 2 high-speed push-button electric Otis elevators; Wilder & Wight, Archts., 4th floor First National Bank Bldg., Kansas City. (Lately noted to cost about \$400,000.)

Tex., Galveston.—John Sealy Hospital let contract to erect addition to building; 200x80 ft.; brick and wood; tile roof; wood floors; cost \$60,000; steam heat, \$2000; conduit lighting, \$2000; Cram, Lewis & Wickenhoefer, Archts., 200 5th Ave., Galveston and New York. (Lately noted.)

Tex., San Antonio.—City and Bexar county let contract to H. N. Jones Construction Co., San Antonio, to erect Robert B. Green Memorial Hospital; 5 stories; reinforced concrete and brick; tile partitions and floors; terra-cotta cornice; elevators; Carey roof; cost \$225,000; Reuter & Harrington, Archts., 511 Frost Bldg., San Antonio. (Lately noted.)

HOTELS

Fla., Safety Harbor.—Espiritu Santo Springs Co., W. E. Sinclair, Mgr., let contract to Frank Estes, Mgr. of Mutual Co., St. Petersburg, Fla., to erect resort hotel; white brick; 20 rooms; steam heat; electric lights and fans; completion by Nov. 1.

Ala., Haleyville.—W. H. Cleer let contract to Joy-Marriott Co., Birmingham, to erect Cleer Hotel; 30 rooms; cost about \$30,000; L. R. Benz, Archt. (Noted in July.)

Tex., Valley Mills.—J. B. Crow let contract to R. B. Crow, Waco, to erect hotel; 120x100 ft.; ordinary construction; electric lights from city plant; cost \$20,000; steam heat \$3000; Geo. Burnett, Archt., Waco. (Lately noted.)

MISCELLANEOUS

Fla., Key West.—Clubhouse.—Key West Athletic Assn. let contract to T. Frank Russell, Key West, to erect clubhouse. (Previously noted.)

Fla., Starke.—Barn.—A. J. McKinney let contract to erect barn. (See Dwellings.)

Mo., St. Louis.—Hall.—Bernard Held let contract to erect addition to store and hall. (See Stores.)

Mo., St. Louis.—Amusement.—Childs Co., 214-29 N. 7th St., let contract to Murch Bros. Constr. Co., 1855 Railway Exchange Bldg., St. Louis, to erect 2 additional stories to building for billiard room and bowling alley; joist construction; 5-ply tar and gravel roof; electric elevator; cost \$30,000; J. C. Westervelt, Archt., 36 W. 34th St., New York. (Lately noted.)

Tenn., Ashland City.—Postoffice.—Hugh Dozier let contract to erect building for postoffice. (See Government and State.)

RAILWAY STATIONS, SHEDS, ETC.

Ark., Morrilton.—St. Louis, Iron Mountain & Southern Ry., J. R. Stephens, Ch. Engr., St. Louis, let contract to erect \$15,000 depot; construction begins Sept. 1.

SCHOOLS

Ala., Mount Vernon.—School Commrs. let contract to Gabe Chamberlain, Mobile, to erect high-school building; 4 rooms; brick; hot-air heat; cost about \$3000.

Fla., Apopka.—School Board let contract to J. R. Womble to repair and complete school building; 2 stories; 8 rooms and auditorium; cost \$5000 to \$7000. (Lately noted to vote bonds.)

Ga., Americus.—Third Dist. Agricultural and Mechanical College let contract to B.

ce. — Hugh
McNabb
for post-
office; heat
st, without
le, Archt.

t contract
penter and
nd repairs
ft.; brick,
iron roof;
I. Page &
sted.)

nsury De-
ng Super-
et let con-
l, Seneca,
act lately

ETC.

Hospital Co., Kan-
g at Lin-
ft. floor
erra-clay
and clay
a electric

Archt.,
Kansas
\$40,000.)
capital let
ing; 20x
900; con-
00; Wick-
alveston

ar coun-
tion Co.,
reen Me-
ced con-
d floors;
roof;
Archt.,
(Lately

Santo
let con-
a hotel;
electric
contract
to erect
\$20,000;

contract
120x100
lights
n heat
(Lately

West
k Rus-
k Pres-
ey let
(s.)
ld let
d hall.

Co.,
Murch
hange
ories
willing
and
30,000;
a St.

Hugh
g for
(e.)
ETC.

tain
ngr.,
15,000

let
to
rick:
tract
plete
ately

ural
B.

C. Hogue, Americus, to erect residence for J. M. Cullum, principal; 2 stories; brick veneer; cost \$4500. (Lately noted.)

Md., Baltimore.—Board of Awards let contract at \$740 and \$402, respectively, to Fred Decker & Son, 1213 E. Biddle St., Baltimore, to alter and repair schools Nos. 54 and 112. (Lately noted.)

Mo., Hannibal.—St. John's Evangelical Lutheran Church let contract to Arthur Hogg, Hannibal, to erect school building; cost \$15,000.

N. C., Burlington.—City let contract to McCauley & Mitchell, Burlington, to erect school building; 80x168 ft.; brick, stone and frame; slag roof; double floor, felt dead-end; electric light; cost \$40,000; heating \$400; Linthicum & Linthicum, Archts., Durham, N. C. (Noted in Aug.)

Okl., Tulsa.—School Board let contract to Bradley & Boydell, 16 Nebraska Bldg., Tulsa, to remodel; stone wall, iron fence, fire escapes, lower boilers, mill work, etc., at school; cost \$5000; construction begun; also let contract to J. J. Buck to erect 2 school buildings in Owens Addition; one 105x55 ft.; 2 stories; other, 65x34 ft.; 1 story; cost \$2,000.

S. C., Hemmingway.—School Board, J. M. Eaddy, Chrmn., let contract to R. L. Graveley, 27 W. Evans St., Florence, S. C., to erect school building; 103x53 ft.; 10 classrooms and auditorium; faced with texture brick; tar and gravel roof; gum flooring; Acme plaster; Hy-Lo slate blackboards; drinking fountains and plumbing in general contract; cost \$15,500; Jas. D. Benson, Archt., Charleston, S. C. (Noted in July.)

Tenn., Briceville.—School Board let contract to Wardrop Construction Co., Knoxville, to erect school building; 49.10x80.6 ft.; 3 stories; concrete first floor; other floors brick; gravel roof; wood floors; cost \$10,000; steam heat, about \$1000; electric lighting; Barber & McMurry, Archts., Knoxville; construction begun. Address G. P. Norman, Briceville. (Lately noted.)

Tenn., Chattanooga.—Hamilton County Board of Education let contracts as follows for repairs and additions to schools: Repairs to South St. Elmo School, Chambers & Son, at \$587.50; repairs to Normal School, W. A. Varner & Son, at \$705; repairs to East Chattanooga Colored School, Mr. Lattie, at \$155; addition Sale Creek School, J. S. Card, at \$5750; addition to Southside Hill City School to Mark Wilson at \$1267; heating plant for Southside Hill City School to Chattanooga Heating Co. at \$315. (Previously noted.)

Tenn., Newbern.—City let contract to E. G. Parish, Jackson, Tenn., to erect school building; brick, frame and concrete; Carey or metal roof; heating and lighting reserved; cost \$18,000 to \$20,000; J. F. Parish, Archt., Jackson. (Lately noted.)

W. Va., Cyclone.—Board of Education let contract to J. W. Fisher, Logan, W. Va., to erect 3 school buildings in district; 40x56 ft.; frame storm siding; buildings papered and plastered; composition roof; wood floors; light from power line; cost \$7000; hot-air heating, \$1000; J. W. Fisher and Rupert Wilson, Archts., Logan, W. Va.

W. Va., Princeton.—Board of Education let contract to Jamison & Karns, Princeton, to erect school building at Konah and Richie Sts.; 30x55 ft.; brick; tin roof; wood and concrete floor; steam heat; electric light; cost \$65,000; A. F. Wysong, Archt., Princeton. Address Contrs. (Noted in July.)

W. Va., Parkersburg.—Roche-Bruner Building Co., Cincinnati, O., general Contr. at \$24,028 to erect high school, let following subcontracts: Excavating at 22½ cents per yard, Graham Bros.; 1,500,000 bricks, Parkersburg Brick Co. at \$12,000; both of Parkersburg; structural steel, Riverside Bridge Co., Martins Ferry, O.; hauling, Harry Nicely, Parkersburg; 3 stories and basement; brick; Frank L. Packard, Archt., Columbus, O. (Lately noted.)

STORES

Ark., Little Rock.—R. W. Rightsell let contract to W. T. Ault, Little Rock, to erect building at 3d and Louisiana Sts.; 2 stories; brick facing; stone trimmings; lower floor for business purposes; upper floor leased to W. E. and T. W. Baldwin for bachelor apartments; cost \$25,000; Thos. Harding, Archt., Little Rock.

Fla., St. Cloud.—J. K. Conn is reported to have let contract to erect building; 2 stories; stores on first floor; apartments on second; 50x50 ft.; brick.

Fla., Starke.—A. J. McKinney let contract to erect barn and building for store and dwelling. (See Dwellings.)

Md., Brunswick.—John E. Meadows let contract to H. B. Funk to erect building for store and flats; 28x31x25 ft.; 2 stories; iron roof; concrete cellar 24x31 ft.; storeroom 24x31 ft., and flats 25x36 ft.; wood floors.

Mo., St. Louis.—F. Ebbeler let contract to Stiel-Nelson Co., St. Louis, to alter store-room at 2940-50 Olive St.; cost \$8000.

Mo., St. Louis.—Wm. Pickel let contract to Pickel Realty Co., St. Louis, to erect business building; stucco; 200x185x10x23 ft.; 2 stories; slow combustion; 7 stores on lower floor; cost \$70,000; P. J. Bradshaw, Archt., St. Louis.

Mo., St. Louis.—Bernard Held let contract to J. H. Schroeder, St. Louis, to erect addition to store and hall; cost \$8000.

N. C., Ayden.—J. J. Edwards & Son let contract to Southern Building Co., Goldsboro, N. C., to erect store building; 3 stories; 30x75 ft.; composition roof; steam heat; hand-power elevator; cost about \$10,000; Benton & Moore, Archts., Wilson, N. C. (Noted in July.)

N. C., Roanoke Rapids.—M. A. Daniel let contract to J. W. Smoot, Roanoke Rapids, to erect brick building; 2 stories; store and moving-picture theater on first floor; 2 flats on second; cost \$8000.

Okl., Drumright.—J. H. Blackwelder, Drumright, has contract to erect M. & K. Store on Broadway; 125x25 ft.; brick; 2 double curved plate-glass windows in front; cost \$15,000.

Okl., Sand Springs.—Dalton Bros. let contract to Bradley & Boydell, 16 Nebraska Bldg., Tulsa, Okla., to erect building for furniture store; 76x50 ft.; concrete foundation; brick construction; Barrett 5-ply roof; wood floors; gas heat; cement sidewalks; cost \$12,000; plans by owners. (Lately noted.)

S. C., Anderson.—Henry McGowan is reported to have let contract to C. M. Guest, Anderson, to erect building to replace burned structure and remodel building adjoining.

Tenn., Nashville.—D. Sellman let contract to I. N. De Hart to remodel store building at 11th Ave. and Jefferson St.; Harry J. Frahn, Archt., Nashville.

Tex., El Campo.—E. H. Forrester has plans by and let contract to Zuber & Hill, El Campo, to erect store building; 50x75 ft.; brick; gravel and felt roof; concrete floors; wired for lights; no heating plant; cost \$4000, exclusive of side walls. (Lately noted.)

Va., Fredericksburg.—Col. E. D. Cole let contracts as follows to erect store building at 416 Commerce St.: General construction, F. P. Stearns; electric wiring, Rappabannock Electric Light & Power Co.; plumbing, Geo. W. Heflin; all of Fredericksburg; Philip N. Stern, Archt., Fredericksburg.

Va., Roanoke.—A. M. Fuller let contract to Wade & Graham, Roanoke, to remodel and erect addition to 3-story building at 130 Campbell Ave.; will install new heating plant, etc.; H. M. Miller, Archt., Roanoke.

W. Va., Parkersburg.—C. T. Heteshew and W. W. Walker let contract to E. M. Enright, Parkersburg, to erect building for store, lodge and offices on Market St.; 44x100 ft.; 3 stories; brick, stone, concrete, steel and frame construction; Barrett Specification roof; first floor concrete, others double oak; cost \$18,000; R. H. Adair, Archt., Parkersburg. Address contractor. (Previously noted.)

THEATERS

N. C., Roanoke Rapids.—M. A. Daniel let contract to erect building for store, moving-picture theater and flats. (See Stores.)

WAREHOUSES

La., New Orleans.—Board of Comms. of Port of New Orleans, Ernest M. Loebe, Prest., 200 New Orleans Court Bldg., let contract to Jacob A. Zimmerman & Son, 18 E. 41st St., New York, to construct reinforced concrete buildings for cotton warehouse and terminals, including 2-story wharfhouse about 120x200 ft., warehouse "E," about 150x590 ft., with attached runways and appurtenances, located on Mississippi River near Valence St.; Ford, Bacon & Davis, Engrs., 921 Canal St., New Orleans. (Zimmerman & Son noted in July as lowest bidders at \$1,109,000.)

Md., Baltimore.—DeFord Company let contract to Cowan Building Co., 106 W. Madison St., Baltimore, to erect 5-story warehouse on Hollingsworth St. south of Lombard St.; 28.5x42.3 ft.; slag roof; cost \$15,400.

S. C., Columbia.—Ruff & Anderson let contract to Seastrunk Construction Co. to erect farm implement warehouse and repair shop at Blandburg and Park Sts.; 250x70 ft.; corrugated iron on brick foundation; corru-

gated roof; mill floor; cost \$5000 to \$6000; construction begun. (Lately noted.)

Tex., Austin.—Travis County Bonded Warehouse Assn. let contract at \$3544 to Fischer & Lambie, Austin, to erect cotton warehouse; 80x324 ft.; wood trusses; corrugated-iron roof; C. H. Page & Bro., Archts., Austin. (Lately noted.)

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Birmingham.—The Federal Court has ordered the sale of the Birmingham, Ensley & Bessemer R. R. and the electric street railway extending from East Lake through Birmingham to Ensley, with a branch into Pratt City. The sale will take place at the Jefferson County Courthouse about the middle of October. It is stated that after the sale of the lines steps will be taken to build extension from Ensley to Bessemer and Tusculoo. Address W. I. Grubb, Judge, Federal Court.

Ala., Fort Payne.—Alabama Great Southern R. R. is securing right of way for double track through De Kalb county. It is also stated that the road will be double tracked through Etowah county. An extension to Gadsden may also be built. Fairfax Harrison is Prest. at Washington, D. C.

Ark., Viola.—Co-operative Zinc Co. (C. L. Kennard, Jonesboro, Ark.) may build a dummy line to the nearest railroad from its plant at Viola.

Fla., Kenansville.—South Florida & Gulf Ry. has laid 19 mi. of track out of Kenansville, more than half the way to Bassenger. C. H. Armstrong is Ch. Engr.

Fla., Miami.—The Miami Terminal R. R., to be owned and operated by city, will build a line about 3 miles long from terminal dock to Miami Canal, connections to be made with Florida East Coast and any other roads leading to Miami and Bay. Address Edwin Kelly, 121 Ave C North, Miami.

Ga., Dalton.—Southern Ry. has surveyed for spur 1 mi. long to the Crown Cotton Mills. W. H. Wells, Washington, D. C., is Ch. Engr. of Constr.

Ky., Burkesville.—Plans are reported under way to build an electric railway from Burkesville to Edmonston, Ky., about 22 mi. Cumberland Traction Co., which is building a line from Edmonston to Elizabethton, Ky., may be able to give information.

Ky., Edmonston.—Cumberland Traction Co. of Elizabethton proposes building a line 50 mi. long from Edmonston to Elizabethton. Connections will be made with the Illinois Central and the Louisville & Nashville railroads. Geo. H. Greenup of Elizabethton, L. Reid Nunn, F. L. James and others have incorporated the company with capital stock of \$50,000.

Md., Baltimore.—Western Maryland R. R. is grading for 25-yard tracks at Port Covington, on the harbor. H. R. Pratt, Baltimore, is Ch. Engr.

Mo., Jefferson City.—Ozarks Ry. Co. of Mountain Home, Ark., has incorporated in Missouri to build that part of its proposed line in this State, about 10 mi. K. V. Loba of Mountain Home and E. C. McAfee of Springfield, Mo., are among those interested.

Okl., Alva.—Bonuses for the construction of a railroad from a point on the Santa Fe system near Alva to Buffalo, Okla., about 60 mi., are being obtained. James H. Armstrong of Oklahoma City may give information.

Okl., Oklahoma City.—Southwestern Power, Light & Ry. Co., capital stock \$12,000,000, which is to build the proposed Oklahoma-Gulf Electric Line, has considerable grade built between Oklahoma City and

Tex., Dallas.—D. E. Johnson, Denver, Col., is reported to have let contract to W. C. Hedrick Construction Co. to erect warehouse; 4 stories; reinforced concrete and brick; cost \$40,000.

Tex., Houston.—J. F. Garrett let contract to John Stradler to erect warehouse; 100x160 ft.; cost \$20,000.

Denison, W. T. Croslen is Prest. and J. H. Stewart, Secy., 406 Security Bldg., Oklahoma City.

Okl., Oklahoma City.—Fort Smith & Western Ry. is reported surveying for an entrance to Oklahoma City and may build direct from either Warwick or Sparks, Okla., about 35 or 40 mi., or from Prague via Shawnee, about 50 mi. B. F. Beckman is Engr. at Fort Smith, Ark.

Okl., Tulsa.—Tulsa Traction Co. has now 6 mi. in Tulsa and later will build a total of 80 mi. between Tulsa and Sapulpa, Collinsville, Broken Arrow, Bixby and Okmulgee, Okla., through level and rolling country. Just incorporated and organized with \$100,000 capital. Purchased Oklahoma Union Traction Line in Tulsa. Address I. F. Crow, Secy. and Treas. Other incorporators and directors are G. C. Stebbins, Prest.; A. J. Biddison, Vice-Prest. and Gen. Counsel; W. E. Bennett and J. S. Pearce, B. C. Red-graves is Supt.

S. C., Charleston.—It is announced that construction on the Savannah extension of the Seaboard Air Line (the Charleston Southern) will begin this week. Line is 85 mi. from Charleston via Dale, Grays Hill and Pritchardville to Savannah. W. R. Bon-sal, Hamlet, N. C., is in charge. Contractors are assembling men and materials.

S. C., Greenville.—Southern Ry. has invited bids by Sept. 3 for the construction of double track on main line from Greenville to Central, S. C., 26½ mi. It will be let in 2 sections, viz.: Greenville to Easley, 11½ mi., and Easley to Central, 15 mi. W. H. Wells, Washington, D. C., is Ch. Engr. of Constr.

Tenn., Smithville.—Nashville & Eastern Electric Ry. Co., capital \$10,000, has filed articles of incorporation to build an electric railroad from Lebanon to Smithville, about 35 mi., via Watertown, Alexandria, Liberty and Dowelltown, with branches to Temperance Hall and other places. Incorporators: T. W. Wade, S. C. Puckett, Guy Davis, Dibble Dinges and Charles Edwards. Nashville, Chattanooga & St. Louis Ry. is said to be interested. (Previously mentioned.)

Tex., San Antonio.—Chamber of Commerce has endorsed interurban plan from San Antonio to Houston, 180 mi., proposed by Ed. Kennedy of Houston, Prest. of the Houston & Richmond Interurban Co., which will amend charter accordingly.

Va., Petersburg.—Norfolk & Western Ry., it is reported, contemplates double-tracking City Point branch. J. E. Crawford, Roanoke, Va., is Ch. Engr.

Va., Petersburg.—Norfolk & Western Ry. has begun double-tracking the City Point branch from Petersburg to site of the Du Pont powder plant. J. E. Crawford is Ch. Engr., Roanoke, Va.

W. Va., Charleston.—Charleston Interurban R. R. Co. has laid track to Aiden, 4 mi., on its line to Montgomery, about 25 mi. long.

STREET RAILWAYS

Md., Cumberland.—Cumberland Electric Ry. Co. will build double track on Baltimore St. from the Western Maryland Ry. to the Baltimore & Ohio R. R., a distance of several blocks. George L. Wellington is Prest.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Automobile Supplies and Repair Equipment.—See Pumps (Air, Tire), etc. Brantley & Ellis.

Automobiles, Supplies, etc.—Safety First Auto Co., J. H. Evans, Mgr., Indiana,

Miss.—Data and prices on good light truck, view to agency; automobiles and supplies; sawmills; grist mills; gasoline engines.

Benzol.—Office Colonial de Representation Commerciale, Francois Rallion, Director.

General, Point-a-Pitre, Guadeloupe, W. I.—Prices, with samples, from manufacturers of benzol (for use in place of gasoline in automobile industry).

Boilers.—See Sawmill Equipment.—Sawmill, Waynesville, N. C.

Boilers.—Lighthouse Inspector, Baltimore, Md.—Bids until Sept. 16 to furnish 2 Scotch type boilers for tender Ivy; blank proposal forms on application.

Brass, etc.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids until Sept. 14 for delivering brass, motors for aeroplanes, iron nails, Virginia and white pine, wrought pipe, poplar, steel and brass tubing at Navy-yard, Washington. Apply for proposals to Bureau.

Bucket (Wooden) Machinery.—De Loach Mfg. Co., Atlanta, Ga.—Addresses of manufacturers of machinery for making wooden (stave) buckets.

Canned Fruits, etc.—Abram De Sola, Box 95, Curacao, D. W. I.—Addresses of dealers (in California and New York preferred) in canned fruits, such as pears, peaches, apricots, etc.; give prices f. o. b. steamer New York. Also interested in grapes in kegs, and apples.

Canvas.—See Linings (Tailors').—Bensussan, Sides & Co.

Cars (Logging).—See Sawmill Equipment.—Sawmill, Waynesville, N. C.

Cement (Portland).—Farrar Lumber Co., Dalton, Ga.—Addresses of manufacturers of Portland cement, preferably in vicinity of Bluefield, W. Va.

Cotton Linters.—D. O'Sullivan, 1517 E. Cary St., Richmond, Va.—Prices on cotton linters.

Cutting and Corrugating (Metal) Machinery.—Tennessee & Mississippi Mfg. Co., Columbus, Miss.—Prices on machine to cut and corrugate sheet steel, etc. (See Tinner's Tools, etc.)

Derrick.—Powhatan Lime Co., Strasburg Junction, Va.—Second-hand derrick.

Electrical (Laboratory) Supplies.—A. H. Johnson, Pulaski, Tenn.—Catalogues of electrical goods for experimental laboratory, coils, instruments, etc.

Electric-light Machinery.—Marshallville Ginning Co., Marshallville, N. C.—Prices on second-hand generator for 15-light plant with necessary apparatus.

Electric-light Plant.—Taylor County Fair Assn., Ira Chambliss, Secy., Butler, Ga.—Prices on electric plant to light fair grounds.

Electrical Machinery.—See Mining (Coal) Machinery.—Kentucky Coal Block Co.

Electrical Machinery.—See Tinner's Tools, etc.—Tennessee & Mississippi Mfg. Co.

Electrical Machinery.—Southwestern Power, Light & Railway Co., W. T. Croslen, Pres., 406 Security Bldg., Oklahoma City, Okla.—Expects to be in market in Oct. for machinery for 3 hydro-electric plants developing 23,500 H. P. and costing about \$1,000,000.

Electric Motors.—See Pumps (Air, Tire), etc.—Brantley & Ellis.

Elevator.—Treasury Dept., Supervising Archt.'s Office, Washington, D. C.—Bids opened Oct. 8 for installation of electric elevator plant in U. S. Appraiser's stores, Boston; copies of drawings and specifications obtainable at discretion.

Engines.—See Sawmill Equipment.—Sawmill, Waynesville, N. C.

Engines (Anchor).—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Sept. 14 on 3 anchor engines, schedule 8727, delivery Charleston, S. C.

Engines (Gasoline).—Safety First Auto Co., J. H. Evans, Mgr., Indianapolis, Miss.—Gasoline engines. (See Automobiles, Supplies, etc.)

Engine (Gasoline).—See Pumps (Air, Tire), etc.—Brantley & Ellis.

Engines (Gasoline).—See Brass, etc.—Navy Dept.

Engines (Gasoline).—See Motors (Aeronautical).—Navy Dept.

Fire Escape Door Devices.—W. A. Rayfield & Co., P. O. Box 649, Birmingham, Ala.—Fire escape door devices for 2 dormitories.

Handles.—Robt. B. Reed, manufacturers' representative, 463 Hippodrome Annex, Cleveland, O.—Addresses of manufacturers of wooden handles for all purposes.

Grist Mills.—See Automobiles, Supplies, etc.—Safety First Auto Co.

Heating Plant.—H. S. New, Engr., 17 Battery Pl., New York.—Bids on hot-water or steam-heating plant for 9-room frame dwelling at Long Island, N. Y.; plans and information with Mr. New until Sept. 15.

Hose (Fire).—Town of Edenton, N. C., J. R. McMullan, Clerk.—Bids on 500 or 600 ft. fire hose; bids considered at town meeting, Sept. 14.

Iron Plates (Galvanized, Corrugated Sheet).—Office Colonial de Representation Commerciale, Francois Rallion, Director-General, Point-a-Pitre, Guadeloupe, W. I.—Prices, from manufacturers, on galvanized corrugated sheet-iron plates.

Laundry Machinery.—Geo. L. Wilson, Walhalla, S. C.—Prices on laundry machinery; steam and water already supplied.

Levee Construction.—Red River, Atchafalaya & Bayou Boeuf Levee Dist., Alexandria, La.—Bids until Sept. 10 for levee construction totalling 490,000 cu. yds. work; auspices State Board Engrs., New Orleans.

Locomotives.—See Sawmill Equipment. Sawmill, Waynesville, N. C.

Linings (Tailors').—Bensussan, Sides & Co., Salonique, Greece.—Samples and prices from importers of tailors' lining cloth; delivered Salonique, c. i. f. paid, provision made for war risks, no charge for packing; payment to be cash, with 5 per cent. discount, when credit is confirmed and documents received. (Samples similar to required goods are obtainable from office of Manufacturers Record.)

Lumber.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Sept. 14 on soft Idaho pine, also spruce, schedule 8723, and spruce, schedule 8725, delivery Brooklyn; white pine, schedule 8723, delivery Brooklyn, Washington; 10,000 ft. Virginia pine and 15,000 ft. poplar, schedule 8719, delivery Washington; 30,000 ft. poplar, schedule 8723, delivery Norfolk.

Machine Shop Equipment.—See Sawmill Equipment.—Sawmill, Waynesville, N. C.

Mechanical Equipment.—Treasury Department, Supervising Archt.'s Office, Washington, D. C.—Bids opened Oct. 8 for mechanical equipment (except elevators, lighting fixtures, pneumatic-tube system and sprinkler system) of U. S. Appraiser's stores, Boston; copies of drawings and specifications obtainable from custodian of site, Boston, or at this office, at discretion.

Metals.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Sept. 14 on following: 900 lbs. sheet brass, 3830 lbs. (nickel) bar steel, schedule 8726, delivery Washington; hot rolled or forged carbon steel, schedule 8720, delivery Washington; rod copper, schedule 8724, and extra soft steel, schedule 8732, delivery Boston; 300 tons pig-iron, schedule 8724, and slab steel and hull steel plates, schedule 8732, delivery Norfolk; bar steel, steel plates, steel shapes and sheet steel, schedule 8732, various deliveries; cold-rolled machinery steel and steel rivet rod, schedule 8732, and boiler steel plates, schedule 8733, delivery Boston, Norfolk; floor steel plates, schedule 8733, delivery Norfolk and Charleston.

Mills (Sugar Cane).—See Presses (Sugar Cane).—P. H. Carter.

Mining Machinery.—Batesville Mining Co., Clyde H. Miller, Secy.-Treas., 521 N. Wall St., Joplin, Mo.—Opens bids Sept. 20 on mining machinery.

Mining (Coal) Machinery.—Kentucky Block Coal Co., Hazard, Ky.—Retarding conveyors, shaker screens, mine cars, steel rails and motor generator.

Motors (Aeronautical).—See Brass, etc.—Navy Dept.

Motors (Aeronautical).—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids until Sept. 14 for delivering motors for aeroplanes at navy aeronautic station, Pensacola, Fla. Apply for proposals to navy pay office, Pensacola, or to Bureau.

Paving.—Comms. Public Works, Tampa, Fla.—Bids until Sept. 7 for vitrified brick, asphalt blocks, asphaltic concrete and cement concrete; specifications at office City Engr.

Paving.—City of Charleston, W. Va.—Bids at office of B. A. Wise, City Mgr., until Sept. 7 to pave certain streets and alleys; about 34,000 sq. yds.; all classes of material considered; information furnished only to bidders on ground.

Paving.—City, Chas. E. Bolling, Engr., Richmond, Va.—Bids until Sept. 1 for granolithic curb, gutter and sidewalk in South Richmond.

Paving.—City of Taylor, Tex.—A. V. Hyde, City Clerk.—Bids until Sept. 21 for 120,000 sq. yds. paving, to include excavations, curbs, gutters, drainage, etc.; specifications, proposal forms, etc., ready after Sept. 7 and obtainable from W. E. Dozier, Engr.

Paving.—Board of Awards, Baltimore, Md.—Bids until Sept. 8 for sheet asphalt

construction, under contract No. 142, on Rosedale St. from Edmondson Ave. 40 ft. north of Arunah Ave., and Arunah Ave. from Rosedale St. to Longwood St.; about 2700 sq. yds.; profiles, plans, etc., on file with and specifications obtainable from Comms. for Opening Streets.

Paving.—Board of Public Service, St. Louis, Mo.—Bids until Sept. 7 for improving Skinner Rd. with wood block paving and granite curb; plans, specifications, etc.

Paving.—Town of Winter Park, Fla., Percy Dale, Clerk.—Bids until Sept. 29 to construct brick paving according to plans in office Orange County Road Engr. at Orlando, Fla., and concrete paving according to plans on file office Town Clerk.

Phosphor-Bronze Gauge.—W. H. J. Van der Toorn, care Markt & Hammacher Co., 193 West St., New York.—Addresses of manufacturers of very fine mesh phosphor-bronze gauge, Nos. 150, 130 and 120; wants about 167 meters of No. 150, 1 meter wide, and 70 meters of No. 120, same width.

Pipe.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Sept. 14 on 3500 ft. wrought pipe, schedule 8726, delivery Washington.

Pitchforks.—Bensussan, Sides & Co., Salonique, Greece.—Pitchforks—varnished or painted blue and points polished; wants 1000 doz. with 12 teeth and 1000 doz. with 4 teeth; in bundles of 25 each, delivered Salonique, c. i. f. paid, provision made for war risk, no charge for packing; payment to be cash, with 5 per cent. discount when credit is confirmed and documents received.

Plumbing.—State Hospital for Insane, C. Fred Williams, Supt., Columbia, S. C.—Bids until Sept. 9 for installation plumbing in male wards, dining rooms and kitchen; certified check \$500; plans and specifications obtainable from Geo. E. Lafaye, Archt., Columbia.

Poultry Supplies.—W. O. Coole, Marques, W. Va.—Data and prices on general line of poultry supplies.

Presses (Sugar Cane).—P. H. Carter, care Savannah Branch N. P. Pratt Laboratory, 115 Bay St., East Savannah, Ga.—Addresses of manufacturers of machinery to press juice from sugar-cane stalks or machinery for pressing by rolling.

Pumps (Air, Tire), etc.—Brantley & Ellis Automobile Co., 2701 West End Ave., Nashville, Tenn.—Prices on machine for inflating automobile tires (free air station); consider second-hand outfit; electric motor for alternating current preferred; might consider gasoline engine; also wants addresses of manufacturers of light globes for electric cars.

Rails.—See Mining (Coal) Machinery.—Kentucky Coal Block Co.

Rails.—Cumberland Traction Co., Elizabethtown, Ky.—Second-hand rails.

Revetment.—U. S. Engr. Office, Kansas City, Mo.—Bids until Sept. 20 to construct 13,000 ft. standard revetment on Missouri River, 2 mi. from Harrisburg, Mo.

Road Construction.—Eastville Dist. Road Board of Northampton County, Eastville, Va.—Bids until Sept. 27 to construct 55 mi. sand-clay roads; plans and specifications at courthouse after Sept. 15.

Road Construction.—Surry County Highway Comms. of Siloam and Shoals Townships, Dobson, N. C.—Bids until Sept. 6 for road construction under \$25,000 and \$30,000 bonds lately noted.

Road Construction.—Marengo County Comms., Linwood, Ala.—Bids until Sept. 7 to construct roads; \$60,000 available; plans, etc., obtainable from J. B. Wilson, Commr., Demopolis, and W. C. McKnight, Commr., Faunsdale.

Road Construction.—Letcher County, Henry T. Day, County Judge, Whitesburg, Ky.—Will let contract Sept. 7 to construct 4 mi. model roadway.

Road Construction.—Jessamine County Comms., C. S. Woodward, Road Engr., Nicholasville, Ky.—Bids until Sept. 7 to build 1½ mi. turnpike.

Road Construction.—Sequatchie County Road Comms., J. H. Heard, Chrmn., Dunlap, Tenn.—Bids until Sept. 25 to improve road from Bledsoe county line, by way of Dunlop, to Hamilton county line; specifications, blank forms, etc., on file in office Comms. and Edw. E. Betts Engineering Co., Consult. Engr., James Bldg., Chattanooga, Tenn.

Road Construction.—Campbell County Clerk, Rustberg, Va.—Bids until Sept. 4 to construct 9½ mi. macadam road; plans and specifications on file; specifications obtainable from G. P. Coleman, State Highway Com., Richmond, Va.

Road Construction.—Caroline County Comms., Harry Waldorf, Roads Engr., Denton, Md.—Bids until Sept. 21 for construction 2.03 mi. road near Williston and Beauchamps Branch; blank forms of proposal, etc., obtainable from State Roads Com., 601 Garrett Bldg., Baltimore.

Road Construction.—Highway Dept., Board of State Engrs., 104 New Orleans Court Bldg., New Orleans, La.—Bids until Sept. 8 to construct 8.1 mi. earth highway in Red River parish.

Road Construction.—Loudoun County Comms., Leesburg, Va.—Bids until Sept. 3 to construct 4 mi. macadam road between Middleburg and Pot House Rd.; plans and specifications on file at office County Clerk, Leesburg, and J. L. Cresap, Res. Engr., 1218 12th St. N. W., Washington, D. C.

Road Machinery.—Palm Beach County Comms., F. E. Ennell, Chrmn., West Palm Beach, Fla.—Bids until Sept. 13 to furnish road machinery and tools according to specifications on file.

Road Machinery.—J. G. Prichard, Clerk, Greenup, Ky.—Traction engine, with roller combined; road grader and scraper.

Road Surfacing, etc.—Craven County Comms., Newbern, N. C.—Open bids Sept. 6 on gravel hauling and road finishing (by rolling to smooth surface with 5-ton steam or motor roller) on 20-mi. gravel, blutinous-surfaced road; Cape Fear gravel to be supplied by county.

Roasting (Cereal Coffee) Machinery, etc.—The Je-ro-mo Co., J. J. Roberts, Pres., Atlanta, Ga.—Estimates on machinery for cereal coffee plant, capacity about 40,000 lbs. daily; roasting machinery, automatic packing, weighing, cereal elevating, etc.

Roofing.—Box 456, Columbus, Miss.—Samples with prices and guarantee on about 30 squares roofing.

Roofing.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Sept. 14 on 120 rolls 2-ply ready roofing, 108 sq. ft. to roll, schedule 8718, delivery Charleston, S. C.

Safes.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Sept. 14 on 5 new pattern safes, schedule 8713, delivery Annapolis, Md.

Safes, etc.—Chas. A. Bland, People's Bank & Trust Co., Charlotte, N. C.—Prices on safe, vault and bank fixtures.

Sawmills.—See Automobiles, Supplies, etc.—Safety First Auto Co.

Sawmill Equipment.—"Saw Mill," Waynesville, N. C.—Data and prices on second-hand sawmill, 9-ft. size, complete with or without Corliss engines and boilers; 400 H. P. Corliss engine; 800 H. P. in boilers, water-tube preferred; locomotives and logging cars; complete machine shop equipment for sawmill repair shop; first-class condition for inspection.

School Furniture, etc.—S. O. Hart, Sabinal, Tex.—School furniture and three screened stoves for schoolrooms.

Sheller (Nuts).—C. M. Dobbs, Portales, N. M.—Small machine for shelling or hulling peanuts.

Steel Shapes and Plates, etc.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Sept. 22 to furnish steel shapes and plates, billet steel, soft-steel bars, tire steel, cold-rolled steel, manganese steel dipper lips, bolts, rivets, nuts, screws, washers, electric cable, electric street-lighting units, boiler punches and dies, penholders, pencil pointers, memorandum books, letter folders, and pad-board; blanks and general information relating to this circular (No. 965) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Stoves.—S. O. Hart.—See School Furniture.

Testing Machine.—Salem Iron Works, 206 S. Liberty St., Winston-Salem, N. C.—Machine for testing test bars, gray iron and semi-steel castings; good condition, second-hand machine preferred. (Latex incorrectly noted.)

Tile (Roofing).—W. A. Rayfield & Co., P. O. Box 649, Birmingham, Ala.—Tile for roofing 2 dormitories 40x85 ft. each.

Tile.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Sept. 14 on 1200 sq. ft. ceramic, hexagon, white tile, schedule 8722, delivery Charleston, S. C.

Tinners' Tools, etc.—Tennessee & Mississippi Mfg. Co., Jas. A. Fuson, Prest., Columbus, Miss.—Prices on tinners' tools; electrical equipments; machine to cut and corrugate sheet steel, etc.

Trucks.—See Automobiles, Supplies, etc. Safety First Auto Co.

Transits.—Standard Slate Corp., L. S. Nottingham, Jr., Sales Mgr., Esmond, Va.—Second-hand transit; good condition; standard make.

Tubing (Brass).—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Sept. 14 on 1500 lbs. brass tubing, schedule 8726, delivery Washington.

Twine (Binder).—M. R. Jungbeck, Box 15, Portsmouth, Va.—Addresses (for foreign business house) of large manufacturers of binder twine.

Wax-making Machinery.—Mrs. Catherine Coe, Finlay, Tex.—Correspondence with manufacturers of machinery for making wax from bark of Texas plant.

Water Wheels.—See Electrical Machinery.—Southwestern Power, Light & Railway Co.

Water-works.—A. A. Ames, City Secy., Port Lavaca, Tex.—Correspondence, with view to granting franchise for installation water-works; artesian well and pumping plant; population 2300.

Water-works.—J. L. Martin, City Clerk, Macon, Mo.—Bids until Sept. 14 on water-works improvements; bidders requested to be present; items include following: Material and construction of settling basin, coagulating basin and filter plant; furnishing and installing complete mechanical equipment of filter plant, 2 units, capacity 654,000 gals. daily; two 500 G. P. M. centrifugal pumps with motors and one motor-driven centrifugal pump, capacity 400 to 500 gals. per minute, for use at filter plant; 400 G. P. M. motor-driven centrifugal pump with 7½ H. P. motor, barometric condenser and 10-in. horizontal oil separator; pipe, valves and fittings and installation piping at filter plant; 210 tons 4-in. and 88 tons 8-in. cast-iron pipe; gate valves and 35 fire hydrants; laying about 19,000 ft. 4-in. and 4100 ft. 8-in. pipe, etc.; plans and specifications on file with City Clerk and at office of Consult. Engr., E. E. Harper, 914 Grand Ave. Temple, Kansas City, Mo.

Webbing.—British Coathanger Mfg. Co., Ltd., Rockingham St., London, S. E., Eng.—Addresses of manufacturers of upholsterers' webbing (sample at office of Manufacturers Record, Baltimore).

Well-drilling.—Town of Thomasville, Ala.—Bids on drilling well to furnish 200 gals. water per minute.

Wire Springs.—British Coathanger Mfg. Co., Ltd., Rockingham St., London, S. E., Eng.—Addresses of manufacturers of wire springs, such as used by upholsterers.

Woodworking Machinery.—See Buckets (Wooden) Machinery.—DeLoach Mfg. Co.

of 200 degrees Fahrenheit, and from there into a bath of oil and water, thereby proving conclusively the heat, oil and waterproof qualities of the Spartan brand. The Graton & Knight exhibit is an impressive showing of their complete line of products, the quality of these products and their various uses. It also convincingly demonstrates the company's policy to supply not only high-grade goods, but to study conditions with a view to furnishing customers the grade and construction of belting best suited to their individual requirements. To give the trade the best service along these lines the company maintains a large engineering department thoroughly equipped to analyze any type of drive of any installation and submit recommendations for the most efficient and economical method of transmission.

Wants Representatives.

F. J. Sanders, McCall Place, Memphis, Tenn., is seeking sales agencies to represent a well-established line of road machinery, culvert products, contractors' equipment, etc., in the States of Arkansas, Mississippi and Louisiana.

Water-works Contracts.

Department of Public Service, City of Cambridge, O., reports contracts have been awarded for water-works installation to C. P. O'Reilly Co., St. Louis, Mo., for storage reservoir and pipe lines, and to the Pitt construction Co., Pittsburgh, Pa., for dam, pumphouse, pumping machinery and filter.

New Portland Quarters for Western Electric Co.

Expansive business growth has caused the Western Electric Co., 463 West St., New York, to give up its quarters at Portland, Ore., which it has occupied since 1910. The company has moved into a new two-story brick and concrete building at E. Ash and Union Sts., and with its efficiently designed shipping, receiving and warehousing facilities the building is one of the most modern of its kind in the Northwest. It has been planned to facilitate the quick handling of large stocks, which will insure first-class service.

Machine Tool Activity.

Future orders for the delivery of lathe and machine tools, which are suitable for use in the manufacture of shrapnel, are now being taken by many manufacturers. Joseph T. Ryerson & Son, 16th and Rockwell Sts., Chicago, in writing about the activity experienced in the machine tool industry, reports having a number of plants running at full speed on lathe orders at present, and in addition the company has been commissioned by several foreign concerns, as well as some large American organizations, to buy up all new and second-hand lathes available. It is also taking orders for delivery way along into next year.

Spanish Company Opens New York Office.

The Sociedad General de Representaciones de Madrid, Spain, announces that on account of the developing trade between American manufacturers and Spain it has established an office at 30 Church St., New York. The office will be under the personal direction of its general manager, Henry S. Moos, M.E., assisted by Dwight M. Grover, manager of the New York office. The society acts as contractor to Spanish war and navy offices, public works and railroad and

tramway companies, representing manufacturers of machine tools and woodworking machinery, factory and foundry equipment, electric equipment, road machinery, and, in fact, industrial machinery of all kinds.

Comprehensive Westinghouse Electrical Exhibit.

One of the striking features that impresses even the casual visitor to the Panama-Pacific Exposition is the extensive use of electricity. Aside from the spectacular lighting effects, the silent, efficient electric motor is present in many thousands of units all over the grounds, aiding in working out some interesting exhibit or in some other way performing a necessary service. Chief among these exhibits is the display of the Westinghouse Electric & Manufacturing Co. of East Pittsburgh, Pa. Official exhibits of this company are located in the following buildings: Transportation Palace, Machinery Palace and "The Mine," which is located in the Palace of Mines and Metallurgy. In addition to the official exhibits the Westinghouse Company has succeeded in getting several hundred exhibitors to use Westinghouse motors in connection with their exhibits.

The main exhibit and headquarters are located in the Palace of Transportation, devoted to transportation in all of its phases, including steam and electric railways, steamships, automobiles and aeroplanes. Situated at the intersection of the two main aisles, occupying 25,000 square feet of space, the Westinghouse exhibit catches the eyes of visitors entering the building. It was recently awarded the gold medal by the Jury of Awards as the most attractive exhibit space. Dominating the exhibit, and in full view of the thousands who daily pass, is an immense electric locomotive built for the Pennsylvania Railroad. It is of the 400-horse-power 650-volt direct-current type, mounted on a turntable which slowly re-

(Continued on Page 72.)

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Graton & Knight Panama-Pacific Exhibit.

The Graton & Knight Manufacturing Co., oak leather tanners and beltmakers, Worcester, Mass., have an especially complete and instructive exhibit of leather belting and leather specialties in the Palace of Machinery at the Panama-Pacific Exposition. The exhibit is divided into three separate divisions. The first division represents the complete line of Graton & Knight leather belting, including all regular brands, as well as the Neptune waterproof and Spartan steamproof brands manufactured by the company. This part of the exhibit is so arranged that visitors may easily inspect each grade of belting displayed. The second division or panel exhibit is most elaborate. It contains an interesting display of various cuts of leather, the company's different brands of lace leather, also round, twist and built-up round belting, all of which is particularly interesting to users of these various products. Major portion of the second division is devoted to a specialty exhibit which demonstrates the manner in which Graton & Knight utilize the leather which is unsuitable for use in high-grade belting. Certain portions of the hide are not suited for belting purposes, yet when sorted and finished

they are unsurpassed for manufacturing leather sundries. It is both surprising and interesting to note the great variety of leather sundries shown, principal among which are automobile and motorcycle leather specialties of every description, strappings for all purposes, trunk handles, leather aprons, packings, gaskets, discs, pump leathers, washers, etc. In this division is also found a representative showing of shoe counters, soles, welting and other shoe supplies manufactured by the Worcester Counter Co.; also bicycle and motorcycle saddles manufactured by the Persons Manufacturing Co. Both of these companies are a part of the Graton & Knight corporation. The third division is divided into two sections. The first section comprises an operating exhibit of some dozen or fifteen different types of drives. They represent some of the most difficult drives in factory experience, and are all successfully belted, not in accordance with theory, but as a result of many exhaustive tests and sixty-four years' experience in manufacturing leather belting for all conditions of service. In the second section of this division is a demonstration of the remarkable qualities of Spartan brand of steamproof leather belting. Two of these Spartan belts drive through a heat chamber



BOOTH OF THE GRATON & KNIGHT MANUFACTURING CO.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

FINANCIAL NEWS

FINANCIAL CORPORATIONS

Ala., Birmingham.—Regarding reported organization of a new bank, W. R. Hensley, Prest. National Live Stock Com. Co., National Stock Yards, Ill., writes that nothing definite has been decided as yet.

Fla., Tampa.—Florida Mutual Fire Insurance Co. has made application for charter. Henry Giddens will be Prest.; Thomas L. Kennedy, V.-P.; Charles M. Davis, Treas., and Hafford Jones, Secy.

Fla., Dade City.—Dade City National Bank has made application for charter; capital \$25,000; organizers, R. B. Sturkie, E. T. Vaughn, E. W. Stapleton, L. B. Bessinger and J. M. Harvey.

Ga., Waycross.—The Waycross Savings & Trust Co. it is reported, will change its name to the State Bank & Trust Co.

N. C., Lumberton.—Planters' Banking & Trust Co. is chartered; capital \$250,000. R. W. Jones, Wall St., New York, and B. R. Barnes, Barnesville, N. C.; L. Shaw, J. L. Townsend, D. J. Oliver, O. C. Spaulding, K. M. Barnes, George L. Thompson and others, incorporators.

N. C., Mooresboro.—People's Building and Loan Association, Incptd., will begin business about Sept. 15. Y. L. McCardwell, Prest.; J. P. McSwain, V.-P.; W. B. Martin, Secy.-Treas.

Okla., Grandfield.—Home State Bank of Grandfield, recently chartered with \$15,000 capital, will begin business about Sept. 10 with E. M. Kimmel, Prest.; Fred Varner, V.-P., and Floyd Thompson, Cash.

Okla., Wilburton.—Wilburton Masonic Building Association, capital \$500, is organized by W. A. Holson, Lufkin, Okla.; Roy Smallwood, John Boyd, E. F. Lester, W. B. Marshall, L. G. Hysmith, James Redpath, Wilburton, Okla.

S. C., Batesburg.—The Citizens' Bank of Batesburg has made application to convert into the Citizens' National Bank of Batesburg; capital \$30,000.

Tenn., Shelbyville.—Conversion of the Farmers' Bank of Shelbyville, Tenn., into the Farmers' National Bank of Shelbyville is approved; capital \$100,000.

Tex., Abilene.—Guaranty Trust Co. is chartered; capital \$10,000; organizers, J. H. Couch, J. B. Knox, W. J. Tutwiler, C. W. Grey, W. H. Fair, J. V. Houston, Oscar Parker and E. B. Bynum. Business is to begin immediately.

Tex., Howe.—Home Security State Bank is authorized to begin business; capital \$10,000; J. L. Shelly, Pres., and R. L. Edwards, Cash.

Tex., Lufkin.—Masonic Building Assn. chartered; capital \$6000; incorporators, G. A. Kelley, W. M. Glenn and C. H. Thompson.

Tex., Texline.—First National Bank of Texline is approved; capital \$25,000; directors, Johnson Allen, O. C. Downing, C. S. Bingham and J. E. McAvoy.

Va., Norfolk.—Mortgage Security Corp. of America is chartered; capital \$100,000; Jos. R. Hecht, Pres.; Edgar J. Hecht, Treas., and W. Frank Barnard, Secy.

NEW SECURITIES

Ark., Pocahontas.—\$40,000 15-20-year bonds Little Running Water Drainage Dist. have been awarded to Whitaker & Co., St. Louis.

Fla., Clearwater.—Bids will be received until 10 A. M. Oct. 4 by C. W. Weickling, Clerk Board Commrs. Pinellas County, for \$715,000 5 per cent. 15-30-year road and bridge bonds; denomination to suit purchaser.

Fla., Clearwater.—Special School Tax Dist. No. 10, Ozone, comprising Curlew, Ozone and Wall Springs, Pinellas county, has voted \$12,000 6 per cent. 25-year school-building bonds. C. W. Weickling is Clerk Circuit Court, Pinellas county.

Fla., Daytona.—\$150,000 sewerage bonds are to be put on the market. Address The Mayor.

Fla., Dunedin.—The \$25,000 street paving, sewerage, water-works and pier bonds to be voted on Sept. 14 are 1-20-year 6 per cents; denomination \$500. (Previously mentioned.)

Fla., Eustis.—Election is to be held Oct. 5 to vote on \$20,000 sewer bonds. Address The Mayor.

Fla., Eustis.—Election to vote on \$40,000 street bonds will be held Oct. 5. Address The Mayor.

Fla., Jacksonville.—Election is to be held in Duval county Sept. 21 to vote on \$299,380.56 5 per cent. \$1000 denomination bonds for paying off warrants and indebtedness; dated July 1, 1916; maturity Jan. 1, 1946. E. A. Ricker is Chrmn. Board County Commrs. (Previously mentioned.)

Fla., Lynn Haven.—Bids will be received until 4 P. M. Sept. 27 for \$25,000 6 per cent. 30-year improvement bonds. J. H. Dolstrom is Treas. Further particulars will be found in the advertising columns.

Fla., Palmetto.—\$75,000 6 per cent. 35-year improvement bonds have been purchased by J. B. McCrary Co., Atlanta.

Fla., Sanford.—Sept. 6 election will be held in Seminole county to vote on \$250,000 road bonds. Address County Commrs.

Ga., Augusta.—\$250,000 flood-protection bonds are to be placed on the market. Address The Mayor.

Ga., Baconton.—\$6500 school-building and \$5000 water-works and lighting bonds are voted. C. B. Mullins is City Clerk.

Ga., Blakely.—\$10,000 5 per cent. \$500 denomination ice-plant bonds, dated Sept. 1, 1915, and maturing Jan. 1, 1917 to 1936, inclusive, have been purchased by A. N. Berrien, Jr., Atlanta, Ga., at 100.455. W. W. Fleming is City Clerk.

Ga., Coolidge.—The \$15,000 school, water-works and electric-light bonds recently voted are 5 per cents. S. C. Nesmith is Town Clerk.

Ga., Graymont.—Election is to be held in Graymont and Summit, Sept. 14, to vote on \$5000 electric-light plant for supplying lights jointly to the two towns. Address The Mayor.

Ga., Jonesboro.—Bids will be received between Oct. 1 and 15 by J. C. Hanes, Secy.-Treas. Board of Education, for \$15,000 5 per cent. school bonds voted Aug. 21; dated Jan. 1, 1917; maturity \$500 yearly, beginning Jan. 1, 1917.

Ga., Helena.—Sept. 8 election is to be held to vote on \$8000 water-works and \$12,000 sewer 5 per cent. 30-year bonds. Address The Mayor.

Ky., Georgetown.—Election to vote on school bonds will probably be held Nov. 3. J. C. Waller is Supt. of Schools.

Ky., Columbia.—Sept. 11 election will be held in Adair county to vote on \$25,000 road bonds. Address County Commrs.

La., Abbeville.—Bids will be received by A. O. Landry, Secy. Police Jury, Vermillion parish, for \$21,000 5 per cent. 1-20-year \$500 denomination drainage bonds, dated Oct. 1, 1915.

La., Alexandria.—Bids will be opened Sept. 10 by Hawood B. Gist, Secy. Red River, Atchafalaya and Bayou Boeuf Levee Dist., for \$250,000 5 per cent. \$1000 denomination levee bonds; dated Aug. 1, 1915; maturity, Aug. 1, 1965.

La., Cameron.—Grand Lake Ward, Cameron parish, has voted \$36,000 road bonds. Address Police Jury.

La., DeRidder.—\$24,000 5 per cent. water bonds have been sold. J. M. Cox is Mayor.

La., Lake Charles.—City proposes to issue \$125,000 high-school bonds. E. F. Gayle is Pres. Board of Education.

La., Many.—Road Dist. No. 2, Sabine parish, has for sale \$8000 bonds. Address R. L. Gay, Police Juror.

La., Thibodaux.—All bids received Aug. 25 for \$80,000 5 per cent. 4-year bonds Road Dist. No. 2, Lafourche parish, were rejected. Chas. J. Coulon is Secy. Police Jury.

La., Winnfield.—\$50,000 road bonds are voted. Address The Mayor.

Miss., Meridian.—Election will probably be held in Lauderdale county to vote on \$100,000 25-year agricultural high school bonds. Address County Commrs.

Miss., Pascagoula.—Bids will be received until 3 P. M. Sept. 20 for \$25,000 6 per cent. 1-25-year bonds Seawall Dist. No. 1, Jackson county. F. H. Lewis is Chrmn. and J. R. Watts Secy. Board of Commrs.

Mo., Joplin.—Election was held Aug. 31 to vote on \$13,500 viaduct 5 per cent. bonds; denomination \$500. Result not stated. Address J. B. Hodgdon, 201 Joplin St.

Mo., Mansfield.—\$15,000 road bonds are voted. Address Road Commrs.

Mo., Liberty.—Election will soon be held, it is reported, to vote on \$20,000 sewer bonds. Address The Mayor.

Mo., Ozark.—Election is to be held in Christian county Oct. 30 to vote on \$50,000 courthouse-construction bonds. Address County Commrs.

Mo., Springfield.—\$30,000 road bonds are voted. Address Road Commrs.

Mo., St. Joseph.—Bids will be received until 2 P. M. Sept. 18 for \$100,000 school bonds; interest not to exceed 5 per cent. O. K. Pixley is Secy. School Board.

Mo., St. Joseph.—Election is to be held Sept. 21 to vote on bonds, as follows: \$125,000 street repair, \$75,000 light-plant extension, \$10,000 street-flushing equipment, \$15,000 garbage-disposal plant, \$12,000 asphalt-repair plant, \$75,000 park, \$25,000 city work-house, \$550,000 sewer extension, \$25,000 emergency hospital, \$86,000 fire department, and \$50,000 Brookdale flood reservoir. Address The Mayor.

Mo., Webb City.—Sept. 7 election will be held to vote on \$8000 5 per cent. 10-year city jail bonds. Address The Mayor.

N. C., Danbury.—\$20,000 Stockes county bonds for county home have been voted and sold. Address County Commrs.

N. C., Farmville.—\$40,000 water, light and sewerage bonds have been purchased by J. B. McCrary Co., Atlanta, Ga.

N. C., Farmville.—Election is to be held Sept. 21 to vote on \$50,000 Farmville township road-improvement bonds. Address Road Commrs.

N. C., Franklin.—Date for receiving bids for \$10,000 5½ per cent. 30-year town improvement bonds extended to Sept. 6. C. W. Hames is Secy. Board of Aldermen.

N. C., Jacksonville.—Bids will be received until noon Oct. 4 for \$10,000 6 per cent. \$500 denomination Onslow county jail bonds; Frank T. Yopp is Clerk Board County Commrs.

N. C., Lexington.—Election will probably be held in Craven county to vote on road bonds. Address County Commrs.

N. C., Lillington.—The bonds recently voted by Black River township, Harnett county, amount to \$25,000. Address County Commrs.

N. C., Salisbury.—Bids will be received until noon Oct. 1 for \$200,000 5 per cent. 40-year city bonds; dated Oct. 1, 1915; denomination \$1000. Walter H. Woodson is Mayor. Further particulars will be found in the advertising columns.

N. C., Selma.—\$40,000 school bonds will soon be offered. J. H. Worley is Secy. Board of Education.

N. C., Swanquarter.—Bids will be received at any time by R. E. Windley, Commr., for \$5000 6 per cent. 30-year gas light bonds, dated Sept. 1, 1915. Denomination \$500.

N. C., Tarboro.—Bids will be received until Sept. 21 by G. R. Gammon, Secy. Board of

Road Trustees Edgecombe County, for \$30,000 6 per cent. road bonds.

N. C., Whitakers.—Bids will be received until 11 A. M. Sept. 21 by G. R. Gammon, Secy. Board Road Trustees, Edgecombe county, for \$30,000 6 per cent. road bonds; denomination \$1000.

N. C., Wilson.—Bids will be received until 7:30 P. M. Sept. 20 for \$75,000 gas and \$95,000 water 5 per cent. bonds, dated Oct. 1, 1915, maturing Oct. 1, 1945 and 1925 to 1955, inclusive, respectively; denomination \$1000. Address Board of Commrs., Theo. A. Hinnant, Clerk. Further particulars will be found in the advertising columns.

Okla., Claremore.—\$15,000 6 per cent. 25-year park and fair-ground bonds have been purchased by C. E. Honnold. J. Ryan is Mayor.

Okla., Eufaula.—\$25,000 township, McIntosh county, road bonds defeated.

Okla., Jones City.—\$10,000 6 per cent. 25-year water and light bonds are voted and sold. Address City Clerk.

Okla., Marlow.—Election is to be held Sept. 16 to vote on \$15,000 sanitary sewer bonds, which have already been sold to R. J. Edwards of Oklahoma City. Address The Mayor.

Okla., Muskogee.—Greater Muskogee Assn. has organized committee of citizens for purpose of carrying \$200,000 bond election to be used in laying a pipe line to the nearby gas fields to supply cheap gas to manufacturers. Address The Mayor.

Okla., Sapulpa.—Sapulpa School Dist., Sapulpa county, is considering question of issuing high school bonds. Address Board of Trustees.

Okla., Valliant.—Bids are being received by Township Board for \$25,000 road bonds. Address S. B. McCartney, Trustee.

S. C., Clinton.—Question of holding election to vote on \$12,000 to \$15,000 Clinton School Dist. school bonds is under consideration. Address School Trustees.

S. C., Columbia.—Election is to be called to vote on \$300,000 sewerage bonds. Address The Mayor.

S. C., Greer.—Election was held August 31 to vote on \$10,000 electric-light, \$5000 water-works and \$10,000 sewer bonds. Result not stated. Address The Mayor.

Tenn., Crossville.—No satisfactory bids were received Aug. 14 for \$100,000 5 per cent. 20-40-year Cumberland county road bonds. C. G. Black is Secy. County Commrs.

Tenn., Harriman.—Election is to be held early in September to vote on bonds for outstanding obligations for city improvements. Address The Mayor.

Tenn., Jamestown.—\$10,000 5 per cent. 10-year Fentress county courthouse refunding bonds have been purchased by Elston, Clifford & Co., Chicago, at par less \$296; dated Oct. 1, 1915. Address Ward R. Case, Judge Fentress County.

Tenn., Henderson.—The \$30,000 water-works, \$13,000 electric light and \$14,000 sewer bonds recently voted are 20-year 6 per cents. Denomination \$500. J. I. Galbraith is Mayor.

Tenn., Knoxville.—\$26,934.33 6 per cent. 25-year street-improvement bonds have been purchased at \$569 premium by W. W. Willis, Agt., for a Toledo, Ohio, firm.

Tenn., Maryville.—The \$300,000 Blount county pike bonds recently voted are 5 per cents; denomination \$1000; dated Jan. 1, 1916. Of the amount \$100,000 will soon be placed on the market. R. C. McReynolds is Chrmn. County Commrs.

Tenn., Maynardville.—No satisfactory bids were received Aug. 23 for \$100,000 5 per cent. 5-30-year Union county road and bridge bonds, and new bids are asked until Oct. 4 for \$100,000 5 per cent. 10-year bonds. Geo. N. Taylor is Chrmn., Board County Commrs.

Tenn., Sweetwater.—Election will be held Sept. 30 to vote on \$5000 street improvement and \$10,000 school improvement bonds. Address The Mayor.

Tenn., Union City.—\$15,000 city hall bonds defeated.

Tex., Austin.—Attorney-General has approved the following securities: \$100,000 5 per cent. 20-40-year bonds Road Dist. No. 1, Reeves county; \$30,000 5 per cent. 10-year City of Victoria street and bridge bonds; \$2500 5 per cent. 10-20-year bonds Angelina county common school Dist. No. 28; \$2000 5 per cent. 10-year bonds Briscoe common school Dist.; \$8000 5 per cent. 20-40-year Cleburne ward bonds; \$900 Dist. No. 26 and \$1000 Dist. No. 52 5 per cent. 10-20-year Rusk county school bonds; \$12,500 5½ per cent. 10-40-year bonds Guadalupe County Road Dist. No. 3.

Tex., Bastrop.—\$50,000 5 per cent. 30-40-year bonds Road Dist. No. 2, Bastrop county, have been voted. Address P. A. Hanson.

Tex., Beeville.—Steps are being taken to call an election to vote on street-paving bonds. Address The Mayor.

Tex., Belton.—\$250,000 bonds Roger road district, Bell county, have been purchased at private sale by N. W. Harris & Co., Chicago, at par, accrued interest and commission of \$15,000 as attorney's fees.

Tex., Clarksville.—Bids will be received until 2:30 P. M. Sept. 28 for \$100,000 of an issue of \$300,000 5 per cent. 40-year \$500 denomination bonds Road Dist. No. 1, Red River county, dated Aug. 2, 1915. George Morrison is Chrmn. Board County Commrs. Further particulars will be found in the advertising columns.

Tex., Cold Springs.—\$65,000 5½ per cent. 15-year San Jacinto courthouse warrants were purchased by Commonwealth Trust Co., Houston, Tex.

Tex., Denton.—Bids are being received by J. H. Lanford, Pres. School Board, for \$300 10-40-year \$250 denomination bonds of Aubrey Independent School Dist., Denton county.

Tex., Hallettsville.—\$7500 5 per cent. 5-40-year Lavaca county road and bridge bonds have been purchased by J. L. Arlitt, Austin, Tex.

Tex., Highland Park, P. O. Dallas.—\$10,000 light bonds are voted. Address The Mayor.

Tex., Kountze.—\$150,000 5 per cent. 10-40-year bonds Road Dist. No. 1, Hardin county, were purchased by Commonwealth Trust Co., Houston, Tex.

Tex., Llano.—\$34,000 5 per cent. 40-year \$100 denomination Llano county bridge bonds are voted, of which amount \$24,000 will soon be placed on the market. Louis H. Bruhl is County Judge.

Tex., Liberty.—\$22,000 of an issue of \$250,000 5 per cent. 5-40-year \$1000 denomination Precinct No. 1, Liberty county, road bonds are being offered; \$225,000 of issue have been sold. Address J. F. Richardson.

Tex., Lytle.—\$12,000 5 per cent. 20-40-year \$500 denomination independent school district bonds were voted Aug. 21, and will be issued as soon as approved by Attorney-General. Address Dr. R. B. Touchstone, Pres. School Commissioners.

Tex., Nocona.—\$21,000 5 per cent. 20-40-year \$500 denomination water-works bonds voted Nov. 4, 1913, are being offered; dated Sept. 1, 1914. J. L. Biter is Mayor.

Tex., Rockport.—\$75,000 bonds Aransas county, Road Dist. No. 3, are voted. Address County Commrs.

Tex., Rockport.—Election is to be held Sept. 18 to vote on \$300,000 of bonds for causeway across Aransas Bay. Address Judge Roy Jackson.

Tex., Santa Anna.—\$6000 5 per cent. 30-year \$500 denomination school bonds, recently voted, were purchased at par by the State School Board.

Tex., San Marcos.—Bids will be opened Sept. 16 for \$3500 street and alley and \$3500 incinerator 5 per cent. 10-40-year bonds, dated Aug., 1915; denomination \$500. T. C. Johnson, Jr., is City Secy.

Tex., Seguin.—Bids were received until 2 P. M. Aug. 28 for \$12,500 5½ per cent. bonds Road Dist. No. 3, Guadalupe county; denomination \$500. Award not stated. Address J. B. Williams, County Judge.

Tex., West.—City has for sale \$12,500 5 per cent. 40-year bonds. Address The Mayor.

Va., Charlottesville.—Bids will be received until Oct. 1 by A. V. Conway, Business Mgr., for \$75,000 5 per cent. 30-year school bonds.

Va., Roanoke.—\$150,000 4½ per cent. 30-year public-building bonds have been purchased by the Citizens' Bank of Frostburg, Md., at a premium of \$448.50. P. H. Ticker is City Clerk.

Va., Suffolk.—Bill has been introduced in the City Council providing for issue of \$70,000 sewer, street, school and fire-department bonds. Address The Mayor.

W. Va., Hinton.—\$150,000 Greenbrier Dist. and \$100,000 Talcott Dist., Summers county, 5 per cent. 5-32-year road and bridge bonds are voted. J. M. Carden is County Clerk.

FINANCIAL NOTES

The annual convention of the Kentucky Bankers' Association will be held at Frankfort October 6 and 7.

A report from New Orleans says that the branch Federal Reserve Bank there will not begin business until Sept. 10, instead of Sept. 1 as previously reported.

Merchants-Mechanics National Bank

South and Water Sts., BALTIMORE, MD.
DOUGLAS H. THOMAS, President.
JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.
JOHN B. H. DUNN, Cashier.
Capital \$2,000,000. Deposits \$21,070,000
Surplus and Profits \$2,175,000.
Accounts of Banks, Bankers, Corporations and Individuals solicited.
We invite correspondence.

Edwin Warfield, President.

Fidelity and Deposit Company of Maryland

Home Office: Baltimore

Total Assets over \$11,000,000.00.

All Kinds and Classes of Surety Bonds and Casualty Insurance.

Largest and Strongest Surety and Casualty Company in the World.

Financial Statements Prepared.

ALLAN GORDON ARMSTRONG
Public Accountant
Suite 649-650-651 New Monroe Building
NORFOLK, VIRGINIA

ACCOUNTING
AUDITING
SYSTEMATIZING

Suggestions How to Invest

for both large and small investors will be given those who write for our Circular No. AG-143.

A. B. Leach & Co.

Investment Securities

149 Broadway, New York
Chicago Philadelphia Buffalo
Boston Baltimore London

Delaware Trust Company

WILMINGTON, DELAWARE

INCORPORATING under broad, liberal, safe and stable Delaware laws. A fully equipped department for proper organization and registration of corporations.

BANKING AND TRUST department gives special attention to out-of-town customers' accounts.

TITLE DEPARTMENT examines and guarantees title to realty throughout Delaware.

REALTY DEPARTMENT has sites for manufacturing industries. Modern methods of management of property.

J. ERNEST SMITH, Pres. and Gen. Counsel.
WM. G. TAYLOR, Vice-Pres. and Treasurer.
HARRY W. DAVIS, Vice-Pres. and Secretary.
W. W. PUSEY, 2d Title and Real Estate Officer.

The National Exchange Bank

OF BALTIMORE, MD.
Hopkins Place, German and Liberty Sts.

Capital, \$1,500,000.
March 30, 1915, Surplus and Profits, \$850,000.00.

OFFICERS.
WALDO NEWCOMER, President.
SUMMERFIELD BALDWIN, Vice-Pres.
R. VINTON LANSDALE, Cashier.
C. G. MORGAN, Asst. Cashier.
Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals invited.

The First National Bank

OF KEY WEST, FLA.
United States Depository and Disbursing Agent.

Capital - - - - - \$100,000
Surplus and Undivided Profits - 40,000
A general banking business transacted.
Special attention given to collections.

First National Bank

RICHMOND, VIRGINIA
Capital and Surplus - - - - \$3,000,000

JNO. B. PURCELL, President.
JNO. M. MILLER, JR., Vice-Pres.
W. M. ADDISON, Cashier.

JOHN NUVEEN & CO.

First National Bank Building, CHICAGO

We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Specialty.

Write us if you have bonds for sale.

POWELL, GARARD & CO.

39 S. La Salle Street
CHICAGO, ILL.

We buy Southern Municipal Bonds (County, City, School, Road and Drainage District).

We Finance

Electric Light, Power and Street Railway Enterprises
With Records of Established Earnings

We Offer

Bankers and Investment Dealers
Proven Public Utility Securities
Correspondence Solicited

Electric Bond and Share Company

(Paid-up Capital and Surplus, \$14,500,000)

71 Broadway

New York

COTTON YARNS

Paulson, Linkroum & Co.

COMMISSION MERCHANTS

NEW YORK PHILADELPHIA CHICAGO
87-89 Leonard Street 120 Chestnut Street 206 South Market Street

We Buy City, County School and Drainage BONDS

FROM MUNICIPALITIES OR CONTRACTORS

We are in position to pay HIGHEST PRICES.

Write or Wire Us Your Offerings

THE NEW FIRST NATIONAL BANK Assets, \$5,000,000 COLUMBUS, O.

BLACK & COMPANY

(WILMER BLACK, C. P. A.)

CERTIFIED PUBLIC ACCOUNTANTS and AUDITORS

All Work under Personal Supervision of Maryland Certified Public Accountant

Suite 1208 Garrett Building BALTIMORE, MD.

A FORTUNE TO THE INVENTOR

who reads and keeps it, is the possible worth of the book we send for 6c. postage.

Write us at once.

R. S. & A. B. LACEY

Dept. 5

Washington, D. C.

BANK STATIONERY

This month we are making a special run on

BANK ENVELOPES

Send for prices.

Young & Selden Co.

BANK STATIONERS BALTIMORE, MD.

Lithographing, Printing, Envelopes
Blank Book Makers, Book Binding
Letter Heads, Office Supplies
Steel Die Work

GO SOUTH!

FOR SALE Timber, Coal, Iron, Ranch and Other Properties.
Southern States, West Indies, Mexico.
GEO. B. EDWARDS, (Broker)
Tribune Building, NEW YORK, N. Y.
Confidential Negotiations, Investigations, Settlements, Purchases of Property.

CHESTER H. BUCK

Auditor Expert Accountant
CHATTANOOGA, TENN.

Financial Statements Prepared. Business Systems established for new concerns and Old Systems revised and improved. Certified and Sworn Statements Prepared.

We Buy Bonds

City, County, School and Road, from Municipalities and Contractors

WRITE

THE PROVIDENT SAVINGS BANK & TRUST CO.

CINCINNATI

OHIO

The Cutler Mail Chute

A recognized necessity in modern buildings of the office, hotel and apartment class.

Send for circulars and full information to the sole makers:

CUTLER MAIL CHUTE CO.

Rochester, N. Y.

SINGLE ROLL CRUSHERS

FOR ROCK PHOSPHATE AND LIMESTONE

Capacity, 10 to 200 tons per hour for Coarse and Medium Fine Product

Ore Washers, Jigs, Elevators, Conveyors, Etc.

LET US SEND CATALOG AND PRICES

McLANAHAN-STONE MACHINE CO.

HOLLIDAYSBURG, PA.

GEORGIA TALC CO.

MANUFACTURERS OF

TALC AND SOAPSTONE POWDERS
FOUNDRY FACINGS, CRAYONS AND PENCILS

Mines at CHATSWORTH, GA.

Main Office: ASHEVILLE, N. C.

The Mecklenburg Iron Works

Will be glad to answer all correspondence from parties who need or expect to need

Machinery for Handling
GOLD, IRON or COTTON

as they have been manufacturing such machinery for thirty years, and can give entire satisfaction. Their address is

M. I. W.

Charlotte, N. C.

M. I. W.

Temporary Financing of States, Cities and Counties Pending Issuance of Bonds

ALSO ENTIRE ISSUES OF BONDS PURCHASED

Largest Capital and Surplus of Any Financial Institution in Maryland or Any Southern State

Established 1884

Resources Sixteen Millions

MERCANTILE TRUST AND DEPOSIT COMPANY
OF BALTIMORE

A. H. S. POST, President

F. G. BOYCE, Jr., Vice-President

HASKINS & SELLS

CERTIFIED PUBLIC ACCOUNTANTS

30 Broad Street, NEW YORK

WATERTOWN
ST. LOUIS

BALTIMORE
ATLANTA

PITTSBURGH
DENVER

CLEVELAND
SAN FRANCISCO

CHICAGO
LONDON, E. C.

Cable Address "HASKSELLS"

Announce the Opening of an Office at
ATLANTA—Mr. L. C. Matthews, Manager

And an Office at
DENVER—Mr. C. H. Banks, Manager

volves with a majestic dignity that never fails to impress the visitor. The turntable, which is located directly under the center of the dome, is rotated by a 10-horse-power 3-phase 200-volt induction motor at a speed of one revolution every 3½ minutes. This locomotive is said to have been awarded the Grand Prize, the highest award in the gift of the jury.

In connection with this exhibit is displayed a very complete line of railway motor and control apparatus connected and operated as under actual conditions. Also, there is shown new products, including a pressed-steel motor and one developed for use on 5000 volts direct current, together with the new single-phase railway motor used on the Philadelphia-Paoli line of the Pennsylvania Railroad. In addition to the motors there is displayed around the space a complete line of parts entering into the make-up of the motors, such as brush holders and armature coils with sections cut out, showing the strap winding used, etc. Located near the attractively furnished office of Director of Exhibits, H. W. Cope, who is in charge of all the Westinghouse interests at the exposition, is a rack con-

ments and accessories, consisting of two engines completely equipped with starting, lighting and ignition systems and in operation.

In the power-transmission section those interested in matters electrical find much to attract their attention. A three-panel black marine finished marble switchboard, consisting of two generator panels and one feeder panel, has a full complement of accessories, dial meters, rheostats, potential regulator, ground detector, synchroscope, and an electrically operated remote control three-pole single-throw oil switch, mounted on framework in rear of the board, and in addition other breakers of various types. A portion of the exhibit is devoted to a single-pole 300-ampere circuit breaker designed for operation on a 165,000-volt circuit, said to be the largest circuit breaker ever built. The tank, which is of sufficient size to accommodate several people at one time, is cut to permit one to enter and inspect the lining and contacts and general construction. A number of other types of breakers are exhibited, including a 10,000-ampere 750-volt solenoid operated carbon breaker mounted on a slate panel. A meter panel

erating apparatus, motors, fans, etc., and in the Palace of Mines are shown mine locomotives in operation and other mining apparatus made by the Westinghouse Company.

H. V. Jamison Honored.

H. V. Jamison, advertising manager of American Sheet & Tinplate Co., Pittsburgh, Pa., has been awarded a gold medal by the Panama-Pacific International Exposition Society for valuable services rendered in the installation of the large exhibits of the United States Steel Corporation and its subsidiary companies. When the Steel Corporation decided to make an extensive exhibit at San Francisco, Mr. Jamison was appointed director of exhibits. The results were so successful that the Steel Corporation and

\$10,000 6% Bonds

Jacksonville, N. C.
Sealed bids will be received by the undersigned at the office of the Board of Commissioners of Onslow County, in Jacksonville, N. C., until 12 o'clock M., October 4, 1915, for ten thousand dollars' worth of Onslow county bonds, for the purpose of constructing a County Jail, issued under subsection 26 of Section 1318 of the Revisal of 1905. There will be twenty of these bonds of the denomination of five hundred dollars each, with interest coupons attached, bearing interest at the rate of six per centum per annum, payable semi-annually on the first days of October and April of each year until said bonds are paid; said bonds will mature as follows: One thousand dollars each year; the first thousand dollars maturing October 1, 1916, and one thousand dollars each year thereafter until all are paid. The right to reject any and all bids is expressly reserved. This August 27, 1915.
FRANK T. YOPP,
Clerk Board County Commissioners
of Onslow County.

(Continued on Page 76.)

Hidden Factors of Service



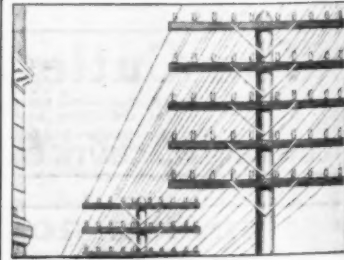
Records kept like this are practically useless for the management of a business. Efficiency is impossible and funds for improvement cannot be obtained.



Records, statistics and accounts kept like this are available for a complete knowledge of the cost and efficiency of each department of the business.



Such methods result in a telephone line which can give only poor service.



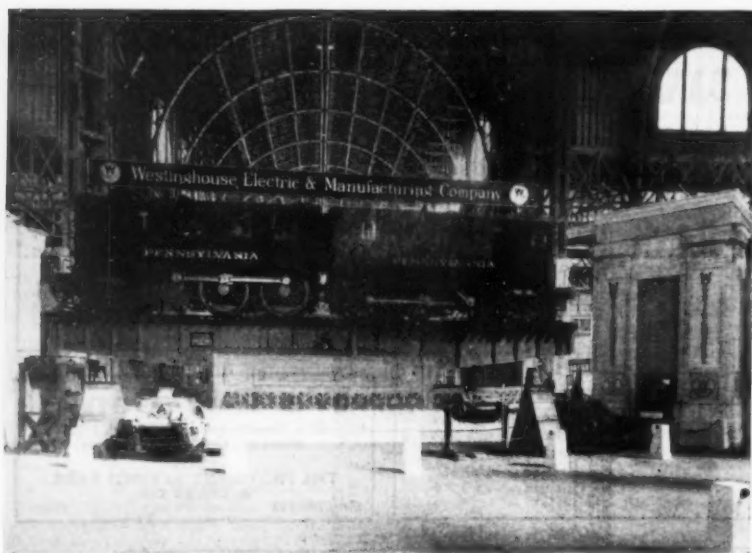
The result of such records is a telephone line like this, which gives good service.



The subscriber knows the difference! He demands a well-informed, intelligent business management.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES
One Policy One System Universal Service



ELECTRIC TURNTABLE AND RAILWAY LOCOMOTIVE OF THE WESTINGHOUSE EXHIBIT.

taining various samples of line material for street-railway and interurban service.

The R. D. Nuttall Co., Pittsburgh, one of the Westinghouse interests, has an exhibit here which shows a number of gears and trolleys of more than passing interest. An 11-horse-power 250-volt mine locomotive motor for 18-inch-gauge track is shown, as are also motors and controllers for electric vehicles. One of the latter type motors has a quarter section cut out through the field and armature to the shaft, revealing the construction used in the windings and core. For use in the garage for charging purposes there is a 12.5-kilowatt 125-volt motor-generator set with auto starter and a sectional switchboard with full complement of instruments and circuit-breakers, capable of charging 10 cars at one time. A mercury vapor rectifier is shown in operation. The method of charging the small 3-cell 6-volt battery used for lighting and ignition on gasoline cars is demonstrated by a mechanical vibrating rectifier.

Appropriately located under the large mural painting of the Lincoln Highway is the exhibit of gasoline automobile equip-

contains a varied assortment of indicating and graphic recording instruments such as are used in power station work. A meter-testing table, built by the States Company, Hartford, Conn., enables tests to be made with great facility on watt-hour meters by checking against a rotating standard, also with a precision instrument showing the customer very plainly how meters are tested and demonstrating the accuracy of the motor in service. Railway-lighting arresters are also demonstrated in an interesting manner with the aid of a 5-kilowatt transformer supplying 13,000 volts to a set of condensers and two adjustable spark gaps. The well-known type MP 1000-volt arrester for car, line and station use, and the condenser type K 600-volt arrester used for car-line protection, are also demonstrated in a manner approaching actual service conditions.

Another distinctive Westinghouse product, the portable substation, is shown in a model built to scale, which is an exact reproduction of the car and all apparatus used in this most important accessory to railway work.

The company's exhibit in the Machinery Palace is devoted exclusively to power-gen-

Reviving Interest in Mineral Operations in North Carolina

[Special Correspondence Manufacturers Record.]

Asheville, N. C., August 23.

Conditions in the mica industry, as disclosed by a visit to the mines south and west of this—that is, through Haywood, Jackson and contiguous counties—and by an examination of the commercial aspect may be briefly described as being very satisfactory. The demand for the finished product is good, and the miners are receiving fair returns.

This situation is having the effect of encouraging enterprise. Frank A. Summer, identified with real estate interests here, has acquired the mineral rights to 350 acres at Swannanoa, 11 miles up the French Broad, which prospecting on an extensive scale discloses to contain large bodies of pegmatite. It is understood that negotiations are now under way with Pittsburgh, Pa., and Michigan parties looking to the formation of an operating company. Should these negotiations go through, it is planned to erect a mica factory and grinding mill. It is also part of the project to establish a mill for grinding spar, with a view to a share of the pottery business.

Jackson county, with Sylva as its centralization point, is the leader, both in production and in quality, in mica. The monthly receipts for the shipments may range between \$6000 and \$7000. Sylva has several mica houses where the product of the mines are received, thumb-trimmed, and prepared for shipment to the markets. The waste is shipped in carload lots to the grinding mills, some of it, indeed, going all the way around by Asheville and Marion via the Carolina, Clinchfield & Ohio Railroad to Spruce Pine, in Yancey county. The freight cost of this journey averages \$25 a car as far as Marion, and it is stated that the Tarheel Mica Co., which is operating a mill at Plum Tree, in Yancey, is contemplating erecting a plant at Sylva.

Among the leading producing mines in Jackson is the Painter, near Sylva, operated by Robert A. Garrett for the Pittsburgh owners. This is a drift mine into rock, and has a reputation for both quantity, size and quality. Dr. A. S. Nicholes of Sylva has opened a drift into rock on his property at Hog Rock, on Little Savannah Creek, which is being worked for him by Charles Hensley. On adjacent land jointly held by Dr. Nicholes and Professor Rhodes of Sylva, a new opening, a shaft, has been sunk by George Rogers and his partners into ground previously worked from other directions. This prospect shows indications of being a producer of very good mica when developed into a mine. At East Haport, near Cullowhee, James Long has turned up some mica books of size, one shipped in July netting him over \$100. On the property of Mrs. Tompkins, at Long Branch, near Webster, Wilson Bros. of Sylva are operating a drift into rock, and Marcellus Buchanan of Sylva is operating a shaft mine on his property on the east fork of Savannah Creek, some 12 miles out. For the same owner on a partnership basis Zene A. Jamison of Balsam is working a drift opening into rock at Grassy Ridge, and at a few miles from Waynesville J. E. Burleson of Yancey county is working a crew on very good mica. In addition to these operations there are a number of clay or bank openings scattered around, which are worked by the farmer owners as the inclination takes them.

With the exception of a few of the longer established mines, most of the operators continue to bore their way into the deposits by means of the drill and hammer. Some of them were unaware that there are post and ratchet drills, hand-operated, suited to their uses, which would save them time and labor.

Passing from point to point, the visitor is struck by the lack of utilization of water-power. The washed clay from the Harris kaolin operation near Webster, the ancient and now deposited capital of Jackson county, is hauled over a tram road by horses the two miles to Dillsboro, and a mile farther down the broad Tuckasee River stands the weed-grown plant of the Consolidated Nickel Co., which established an expensive steam plant and while in operation hauled coal three miles over a bad road. With power from the Tuckasee to operate it, how much more effective would be an electric railroad for the hauling in and out of the coal for roasting

the ore and the necessary supplies, in conjunction with the Harris mine, and what a time-saver and reducer of costs and a boon in general to the countryside would be branches run out to the other mines, some of which are hauling coal over almost impossible roads and up perpendicular hillsides to run their engines? Perhaps the day will come when an electric trunk line will extend along the banks of the Tuckasee—which has its sources in Transylvania county and discharges into the Tennessee—with feeders from both sides carrying the hill folk to town and dispensing with the slow plodding oxen and scarcely more active and less tractable mule as a medium of transportation.

The nickel plant above referred to was built in 1910, and is surrounded by a body of ore which extends for a mile and a half to about a half mile in width. Such work as was done was wholly surface digging. After operating for a year the plant was closed down, owing, it is said, to legal entanglements.

The visitor heard a good deal about the existence of a remarkably fine deposit of spinning asbestos on the farm of an old resident near Webster, for which, and for the nickel and chromic iron ore upon it, a large sum was said to have been offered, and went out there. The asbestos comprised a piece of float which showed a very straight, long fiber, and was, of course, much weathered. Still, there were appearances that were the serpentine opened up at a depth the existence of a good fibrous asbestos might be proven. The nickel and iron ore were there as surface indications.

Discussing minerals with an apparently well informed old mountain man at Balsam, he desired to be informed if garnets had any value. Assured that they had value as an abrasive if in sufficient quantity and readily got at, he said he knew of a deposit near Cullowhee where the garnets could be gathered up with a rake like unto raking gravel. The visitor promised to look this up some time when opportunity served.

Dr. S. Westray Battle of Asheville, who is operating a zinc lead proposition at Charleston, near Chattanooga, Tenn., to the present extent of dumping the ore is understood to be contemplating the erection of a 50-ton mill as soon as pending financial arrangements have been perfected. The percentage on assay of both ores is said to run above the average.

Anson G. Betts of Asheville, who, together with others, is operating a zinc mine at Bloomingdale, Tenn., is understood to contemplate building a mill. The blende at this mine is reached at a depth of 120 feet in a vein running from six feet to nine feet wide.

At Paint Rock, some 40 miles from here toward Morristown, Tenn., the Shut-in Iron Mine, Inc., is working its 80-ton brown iron ore washing plant to capacity and is finding a good demand; later it expects to find a market in Ohio in addition to the furnaces in Birmingham, Eastern Tennessee and Virginia, with the possibility of extending its operations.

Under the surface a good deal is heard of more interest being taken in mining developments in this section, and mention is made of activity in clay and iron ores.

Within a day or two the possibility of yet bringing the traffic and trade of Madison, Yancey and Mitchell counties under Asheville commercial aegis received renewed discussion among a coterie of leaders. Before the Carolina, Clinchfield & Ohio Railroad built across the Blue Ridge all of the trade, or most of it, of these counties was tributary to Asheville, and indeed it is said that this trade was of more value to Asheville than the trade of the entire Asheville-Murphy division of the Southern Railway. Now it has none of it, trade going to Johnson City and other points in one direction and to Marion and Spartanburg in the other. From time to time efforts have been made to retrieve this lost province by the projection of a railroad, but the cost of construction, which would exceed \$1,000,000, gave pause to the matter, and at a pause the matter remains.

The Black Mountain Railway, a feeder of the Carolina, Clinchfield & Ohio, with which it connects at Kona, in Yancey county, extends from the junction 24 miles in the general direction of Asheville to Eskota, 3½ miles beyond Pensacola. Rail head of this road is thus

brought within 25 miles in an air line of Asheville, and what Ashevilleans devoutly wish for is to see that 25 miles traversed by a ribbon of steel.

One means for securing new facilities may lie in the electric line extending nine miles to Weaverville. An extension, say by way of Democrat and the Ivy River, with feeders to chief points, connecting at Pensacola with the Black Mountain Railway, could be built for a comparatively small outlay, and commodious interurban cars and freight and express cars would at one and the same time once more set the trend of trade Asheville-ward and open up new ground to the tourist.

FRANK J. KELLY.

Test of Turbo-Gear Speed Transformer.

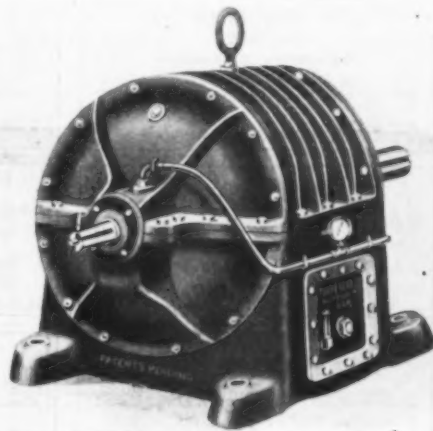
(Continued from page 62.)

under, as nearly as possible, the same conditions as when the motor alone was being tested.

"The original method of determining the efficiency and that used by the gas company was to consider that the electrical conditions were identical in the two runs and that the efficiency of the gear was the ratio of the average torque with gear to the average torque with motor alone.

"In taking all of the readings the benefit of all doubt was thrown against the gear, the load on the motor alone was taken at the highest point reached by the scale pointer, while that on the gear was taken at an intermediate point of the vibrations, so that the actual efficiency of the gear is probably somewhat higher than the result obtained from this test.

"In working out the results of the test I first worked out the efficiency of the motor from the readings at



TURBO-GEAR COMPLETE.

each speed, and then plotted a speed-efficiency curve, and from this I took the values of motor efficiency. By this method the efficiency obtained was 98.8 per cent.

"During the test the gear ran remarkably cool, so that it was at no time uncomfortably hot to the hand, in spite of the large quantity of heat generated by the brake.

"After the test was completed a number of runs were made at horse-powers of 50 and above; in one case 75 horse-power at 3000 revolutions per minute was reached for a few minutes. It was impossible to run any length of time at these big powers on account of the enormous quantity of heat developed by the brake. The gear was run, without load, at 4000 revolutions per minute for some time, and ran with practically no noise, as it did throughout the test."

H. C. Louis of the test department of the Gas & Electric Co. stated in his report that though the efficiency of the gear was high, the results are in line with what is theoretically claimed by the manufacturer. A large number of teeth are in contact at all times, 21 are claimed for this gear, and all pressures are along the pitch line circle with little friction. The manufacturer guarantees 95 per cent. efficiency for any size and speed ratio, and claims efficiencies as high as 98 and 99 per cent.

The Turbo-Gear Company has recently received contract for a 50 horse-power gear to be installed for the Gardiner Bakery Co. of Norfolk, Va. It will be connected to refrigerating machinery furnished by the Frick Company, Waynesboro, Pa.

Architects, Engineers, Chemists, Contractors.

MILBURN, HEISTER & CO.

Architects

WASHINGTON, D. C.

THE ARNOLD COMPANY

Engineers—Constructors

Electrical—Civil—Mechanical

105 South La Salle St. CHICAGO

WALTER WILSON CROSBY

M. Am. Soc. C. E., (formerly State Highway Engineer)

Consulting Engineer

Paving and Roads, Landscape and Park Work, Efficiency and Organization.

1431 Munsey Building BALTIMORE, MD.

P. O. KEILHOLTZ

Consulting Engineer

Formerly Chief Engineer United Railway & Electric Co. and Consolidated Gas, Electric Light & Power Co. of Baltimore.

Continental Building BALTIMORE, MD.

WM. NEWTON DIEHL

Architect

46 Chamberlaine Bldg. NORFOLK, VA.

DAY & ZIMMERMANN

Successors to

DODGE, DAY & ZIMMERMANN

Engineers

Layout, Design, Construction, Industrial Plants, Examination, Reports and Operation, Public Service Properties.

611 Chestnut Street PHILADELPHIA

GILBERT C. WHITE, C. E.

M. Am. Soc. C. E.

Consulting Engineer

Water Works, Sewerage, Streets and Electric Lights.

CHARLOTTE, N. C.

FROEHLING & ROBERTSON

Richmond Testing Laboratory

Chemists and Economic Geologists

Analyses of all kinds. Waters and fertilizers specialties. Standard Cement Testing Examinations and reports on mineral properties.

2 N. 9th Street RICHMOND, VA.

CHARLES T. MAIN

Member A. S. M. E.

Textile Mills

WATER POWER DEVELOPMENTS

201 Devonshire Street BOSTON

C. G. ELLIOTT

C. E., M. Am. Soc. C. E.

Consulting Drainage Engineer

Formerly Chief of Drainage Investigations, U. S. Dept. of Agriculture. Reports on Drainage Plans and Projects.

503 McLachlen Bldg. WASHINGTON, D. C.

J. E. Greiner, Mem. Am. Inst. Cons. Engrs.

Ezra B. Whitman, Mem. Am. Water Wks. Assn.

GREINER & WHITMAN

(Members Am. Soc. C. E.)

Consulting Engineers

Specialties—Bridges, Docks, Water Works, Sewerage Sys. ems, Water Power and Municipal Improvements.

Fidelity Building, BALTIMORE, MD.

RICHARD K. MEADE

Mem. Am. S. M. E.

Mem. Am. I. Ch. E.

Chemical, Mechanical and Industrial

Engineer

Chemical, Cement, Lime and Fertilizer Plants Design and Improved. Reports on Industrial Proposals. Technical Research, Analysis, Tests and Inspection of Engineering Materials.

202 N. Calvert St. BALTIMORE, MD.

BROWN & CLARKSON

Members Am. Soc. C. E.

Engineers

Star Building WASHINGTON, D. C.

HIRAM ALLEN MILLER

Consulting Engineer

Thirty Years' Experience. Expert Work a Specialty.

REFERENCES

Prof. Geo. F. Swain, Harvard University.
Prof. Wm. H. Burr, Columbia University.
Henry S. Pritchett, LL. D., President Carnegie Foundation, New York City.

8 Beacon Street BOSTON, MASS.

WAGNER & MONNICHE

Civil Engineers

Water Supply, Sewerage, Road Improvement, Surveys, Estimates and Specifications, Reinforced Concrete and Steel Buildings and Bridges.

Krise Building LYNCHBURG, VA.

WILEY & COMPANY

Analytical and Consulting Chemists

Experts on Fertilizer Materials, Coal, Greases, Foods, Drugs, Dairy Products, Chemical and Bacteriological Examination of Water for Domestic and Manufacturing Purposes.

15 S. Gay Street BALTIMORE, MD.

C. W. REQUARTH CO.

CONCRETE

Engineering Construction

Reinforced Concrete Bridges, Heavy Foundations and Retaining Walls, Fire and Waterproof Structures, Concrete Sewers and Conduits.

CHARLOTTE, N. C.

FREDERICK H. LEWIS

Civil and Mechanical Engineer

Plans, Specifications and Supervision

for Industrial and Electric Plants.

732 Brown-Marx Bldg. BIRMINGHAM, ALA.

E. W. MYERS

Consulting Engineer

Water Power Water Supply Sewerage

GREENSBORO, N. C.

THE PICARD-LAW CO.

Chemists

The leading Specialists in Cotton Seed Products. Also experts on Fertilizers, Fuel, Boiler and Sanitary Waters, and all branches of Industrial Chemistry.

ATLANTA, GA. WILMINGTON, N. C.

DANIEL B. LUTEN

Designing and Consulting Engineer

Reinforced Concrete Bridges exclusively. Associate Engineers in each State.

INDIANAPOLIS, IND.

MORSE, HALL & COCKEY

Consulting Engineers

ROBERT B. MORSE HARRY R. HALL

M. Am. Soc. C. E. Assoc. M. Am. Soc. C. E.

VINTON D. COCKEY

Specialties—Water Supply and Sewerage, Typhoid Fever Investigations, Landscape Developments, Roads and Paving.

324 N. Charles St. BALTIMORE, MD.

MORRIS KNOWLES

Mem. Am. Soc. C. E.

Mem. Am. Soc. M. E.

Hydraulic and Sanitary Engineer

Investigations and Valuations for Purchase or Financing Water and Sewer Systems, Water Power, Drainage and Irrigation Systems.

Oliver Building PITTSBURGH, PA.

Robert W. Hunt Jas. C. Hallsted

Jno. J. Cone D. W. McNaughton

ROBERT W. HUNT & CO.

Engineers

INSPECTION AND TESTS. Steel and Cement for Bridges and Buildings. Railroad Material and Equipment. Chemical, Physical and Cement Laboratories.

Chicago New York Pittsburgh St. Louis
Dallas New Orleans Los Angeles San Francisco

THE A. J. MARTIN CO.

Contracting Engineers

Bridges, Dams and Power Houses. Difficult Foundation Work.

311 Union Sgr. Bldg. AUGUSTA, GA.

PORTSMOUTH, OHIO

MARTIN J. LIDE

Consulting and Constructing Electrical

and Mechanical Engineer

BIRMINGHAM, ALA.

HARRY STEVENS

Civil and Mechanical Engineer

Water Works, Sewerage and Sewage Disposal, Power Plants, Factories, Steam and Electric Railways, Surveys, Examinations, Reports and General Engineering Work.

Union Trust Bldg. WASHINGTON, D. C.

PITTSBURGH TESTING

LABORATORY

General Inspection

Specialties—Cement and Road Materials, Cast Iron Pipe, Chemical and Physical Tests.

CINCINNATI BIRMINGHAM DALLAS
CHICAGO PITTSBURGH NEW YORK

GAS PLANTS

Complete Gas Plants, including mains and service, designed and installed.

GAS ENGINEERING CO.

TRENTON, N. J.

COMSTOCK ELECTRIC CO.

Engineering

and

Contracting

HIGH POINT, N. C.

MOORE & THOMAS

Highway Engineering Specialists

VICKSBURG, MISS.

E. A. THOMPSON CO.

Consulting and Efficiency Engineers

Inspection, Investigation and Reports. Coal and Water Analyzed. Economical Operation and Power Plant Efficiency. Fuel Tests.

BALTIMORE, MD.

Walker Electric & Plumbing Co.

Plumbing, Heating and

Electrical Contractors

ROME AND COLUMBUS, GA.

LEVY-MORTON CO.

Contractors

Electrical Installation, Tile Floors

COLUMBUS, GA.

HEYWARD & ASHBY

Engineers and Contractors

Engineering Plans and Inspection for Cities and Towns. BONDS PURCHASED. Plain and Reinforced Concrete a Specialty. Over ten years' experience.

Planters Bank Bldg. ROCKY MOUNT, N. C.

G. P. GRIMSLEY, Ph. D.

Mining Geologist

Formerly Asst. State Geol. W. Va. Formerly Mgr. National Limestone Co. of W. Va. Consulting Geologist National Limestone Co. Reports, Consultation on Coal, Oil, Clay, Gypsum, Limestone, Iron Ores.

1105 Wyandotte Bldg. Present Address
COLUMBUS, OHIO MARTINSBURG, W. VA.

DRAUGHTSMEN BLUE PRINTERS

THE CHILDREY COMPANY

(INCORPORATED)

Blue Print Paper

1108-9 Va. Ry. & Power Bldg., RICHMOND, VA.

Sixteen Years Engineering Dept. Penna. Railroad.
Ten Years Municipal Work Baltimore City.

JOSEPH L. WICKES

Assoc. M. Am. Soc. C. E.

Consulting Engineer

Railroad and Municipal Work. Designing and Installing Sand and Gravel Plants.

16 E. Lexington St. BALTIMORE, MD.

H. B. HAVELY, C. E.

Consulting Civil and Hydraulic Engineer

Highway Engineering a Specialty. Bituminous Macadam, Asphalt, Brick and Concrete Pavements, Bridges, Railways, Water-Works and Sewerage.

MORRISTOWN, TENN.

E. M. JONES

Mining Engineer

Reports on Coal and Iron Ore Properties. Purchasers secured for properties of unquestioned merit.

1023-4 James Bldg. CHATTANOOGA, TENN.

E. ELFORD

Contractor and Engineer

Reinforced Concrete Construction

520 Commercial Bldg. COLUMBUS, OHIO

SHAND ENGINEERING CO.

Engineering Reports for Financial Interests.

COLUMBIA, S. C.

THE DABNEY ENGINEERING CO.

Water Works, Sewers, Drainage, Electric Lighting

Systems, Plans, Estimates, Reports.

51 Porter Building MEMPHIS, TENN.

GEORGE C. DAVIS

Analytical and Consulting Chemist

Analyses of Iron, Steel, Ores, Alloys, Coal, Sand, Clay and Cement.

29 South Tenth St. PHILADELPHIA, PA.

The Interstate Construction Co.

General Contractors

708 Realty Bldg. LOUISVILLE, KY.

ARTHUR PEW

M. Am. Soc. C. E.

M. Inst. C. E.

Consulting Engineer

Municipal Work ATLANTA, GA.

McCRADY BROS. & CHEVES, Inc.

Engineers and Contractors

Real Estate Developments, Drainage, Roads, Municipal Work. Surveys, Design, Estimates, Construction.

CHARLESTON, S. C. LAURENS, S. C.

ALFRED M. QUICK

Mem. Am. Soc. C. E. Consulting Engineer

Water Supply and Sewerage Systems.

Dams and Power Plants.

707 Munsey Bldg. BALTIMORE, MD.

L. K. ROBBINS, M. E.

Consulting Engineer

Deep Well Water Supply Systems

227 Westgate Ave. ST. LOUIS, MO.

THOS. C. KELLY, Member A. S. M. E.

Consulting, Designing and Reconstructing Engineer

Electric Light and Power, Heating and

Ventilating, Ice and Refrigerating.

405 2nd National Bank Bldg. CINCINNATI, O.

HENRY E. ELROD

Mem. Am. Soc. M. E. Assoc. M. Am. Soc. C. E.

Roads, Pavements, Municipal Works, Reports

and Appraisal of Public Utilities.

Southwestern Life Bldg. DALLAS, TEXAS

W. C. O'BRIAN

General Mill Construction. Saw Mills a Specialty

Randolph Bldg. MEMPHIS, TENN.

Architects, Engineers, Chemists, Contractors.

Ford, Bacon & Davis, Engineers.

115 Broadway, New York

New Orleans

San Francisco

J. E. SIRRINE

Mill Architect and Engineer

SPECIALTY:

Textile Mills and Water Power Developments

GREENVILLE, S. C.

ARTHUR D. LITTLE, Inc.

ESTABLISHED 1886

The oldest, largest and best equipped organization of Chemists and Engineers in the country for the investigation of conditions affecting the efficiency and economy of industrial operations.

93 Broad Street

BOSTON



Stone & Webster Engineering Corporation

Constructing Engineers

NEW YORK

BOSTON

CHICAGO

ATLANTIC ENGINEERING COMPANY

Civil Engineers

Specialties on Land Drainage, Real Estate Developments, Highways, Bridges, Water Powers, Steam and Electric Railroads. Railroad Valuation, General Appraisals.

Germania Bank Building

SAVANNAH, GA.

THE J-G-WHITE COMPANIES

ENGINEERS

CONTRACTORS

FINANCIERS

OPERATORS

43 EXCHANGE PL.



NEW YORK

WILLIAM C. SPIKER, C. E.

Consulting Engineer

Foundations, Steel and Concrete Skeletons for Skyscrapers and Heavy Buildings; Steel and Concrete Bridges, Dams, Flumes, Canals, Surveys, Estimates, Reports, Waterpower Developments. SPECIALTY—Plans and Superintendence for Complicated or Difficult Construction Work.

1504-6-8 Hurt Building

ATLANTA, GA.

GRAVES ENGINEERING CO., Inc.

MANAGE, CONSTRUCT, FINANCE

Public Utility Properties

Examinations and Reports. Rate Specialists.

35 PINE STREET

NEW YORK

SCOFIELD ENGINEERING COMPANY

Consulting and Designing Engineers

ALL CLASSES PUBLIC UTILITIES

PHILADELPHIA

PENNSYLVANIA

FOSTER & CREIGHTON COMPANY

Engineers and General Contractors

NASHVILLE, TENNESSEE

Steel and Concrete Construction Sawed, Planed, Turned and Cut Stone Crushed Stone and Darlington Oolitic Dimension Stone

RENSHAW & BREECE

Reports on Oil and Gas Properties

HUNTINGTON, W. VA.

ROBERT M. McCANDLISH ENG'G CO.

Engineers and Architects

Cold Storage Ice Making Refrigeration

Midland Building KANSAS CITY, MO.

J. E. CUNNINGHAM

Geologist

Examination of Properties and Reports

Geology, Mineralogy, Inorganic Chemistry

Robson-Prichard Bldg. HUNTINGTON, W. VA.

A. Z. Radcliffe

W. H. Gaskill

RADCLIFFE & GASKILL

Architects

Salisbury B. L. & B. Assn. Building

SALISBURY, MD.

ARCHITECTS

ENGINEERS

Your card on these pages will place you directly before the active forces of the South and Southwest.

H. E. MOLÉ

Engineer

Examinations, Estimates and Reports.

Plans and Specifications. Lighting and

Power Properties.

55 Liberty Street

NEW YORK

W. K. Hazen

Stanley Kadlec

SALISBURY

ELECTRIC & SUPPLY CO.

Electrical Engineers and Contractors

Bridge Work

SALISBURY, MD.

WALKER ENGINEERING CORPORATION

J. B. WALKER, President
Railroad, County and Municipal Engineers.
Sewerage Systems. Maps. Water Supply.
Drainage.

411-414 Amer. Nat. Bank Bldg., TAMPA, FLA.

New York City

100 William St.

NICHOLAS S. HILL, Jr.

AND

S. F. FERGUSON

Consulting Engineers

Water Supply and Sewage Disposal
Evaluations and Reports.

Laboratory for Analysis of Water
and Sewage and for Testing Cement
Sands, Coal and Metals.

Steam and Hydraulic Power Plants

Hogue Engineering Association

Surveys, Estimates, Plans, Reports, Steam
and Electrical Railway Location and Con-
struction, Reports on Coal Properties,
Bridges, Sewers and General Engineering.

CHARLESTON, W. VA.

R. M. HUDSON

Paving Contractor

422-423 Healey Building

ATLANTA, GA.

References—The Leading Cities of the South

Dredging

RIVER AND HARBOR IMPROVEMENTS

Hydraulic Fills Land Drainage Dock Construction

GLOBE DREDGING CO.

SAVANNAH, GA.

THE J. B. McCRARY COMPANY

Engineers

ATLANTA, GEORGIA

MUNICIPAL IMPROVEMENTS

Southern work only. Have built over half of the Water, Light and Sewer
Systems in Georgia and Alabama. We Design — Finance — Superintend.
Bonds Purchased.

Architects, Engineers, Chemists, Contractors.

TUCKER & LAXTON

Contracting Engineers

Filters, Concrete Work, Hydro-Electric and Steam Electric Construction
CHARLOTTE, NORTH CAROLINA

THE S. R. SMYTHE COMPANY

Engineers

PITTSBURGH, PA.

Contractors

Steel Works, Rolling Mills, Blast Furnaces, Hot Blast Stoves, Furnaces for all
Purposes. Operated with Producer Gas, Natural Gas, Oil or Pulverized Coal.
Coke Ovens. Gas Producers, Hand Operated or Mechanical.

The Valve of the Era.

SCHILD SLIDING GAS AND AIR REVERSING VALVES

THOMPSON & MOSELEY, Inc.

Contracting Engineers

GREENSBORO, N. C.

DRAINAGE

ALLEN-SCALES ENGINEERING COMPANY

Engineers and Contractors

Water Works

Power Plants

Stahlman Building

Heating and Ventilation

NASHVILLE, TENN.

HOWARD S. GRIMES

General and Consulting Purchasing Agent

For all lines of merchandise for manufacturers, cotton mills and contractors
Accounts Solicited Best References
429 Law Building BALTIMORE, MD.

G. B. HOWARD & COMPANY

Engineers

Surveys—Reports—Construction—Interurbans—Highways

Municipal Improvements

150 4th Avenue N.

NASHVILLE, TENN.

SAVANNAH ENGINEERING AND CONSTRUCTION CO.

SAVANNAH, GEORGIA

Engineers and Constructors

THE GWYN SCHOOL

A home school for girls. Equipment new and modern in every particular.
Grounds ample for outdoor sports and class work. Number of boarders limited.
Special attention given to health and home conditions. Diploma accepted at
Converse College and other high-grade colleges. Individual instruction given to all
students. One teacher for every ten girls. Particular attention paid to outdoor
sports.

SUMMER CAMP conducted in the mountains of North Carolina, near Asheville,
during the months of July and August.
For catalog and full information address

MISS ELSIE L. GWYN, Principal, Spartanburg, S. C.

CONVERSE COLLEGE

SPARTANBURG, S. C.

is one of the only six women's colleges in the South honored by membership as a standard college in "The Association of Colleges and Preparatory Schools of the Southern States." Its B. A. degree is accepted by the highest grade Colleges and Universities and admits, without further work, to candidacy for the M. A. degree. It has separate science, music, and library buildings; dormitories limited to 190; gymnasium and infirmary; 42-acre campus; and 38 teachers and officers. It is thirty-five miles from the Blue Ridge mountains, and has an ideal winter climate. It owes no debts, and has an endowment. It is accessible North, East, South, and West by six lines of railway. If you wish a catalogue, address

ROB'T P. PELL, Litt. D., President Spartanburg, S. C.

[Continued from Page 72.]

Its subsidiaries were accorded the Grand Prize for the excellence of their exhibits and Mr. Jamison was awarded a gold medal in recognition of his services.

Sale of Tennessee Coal Lands.

Approximately 54,000 acres of coal lands, comprising the property of the New River Coal & Coke Co., which is located in Anderson, Campbell and Scott counties, Tenn., will be offered for sale September 25, 1915, in front of the Courthouse at Clinton, Tenn. There is said to be no better coal land in the State of Tennessee. The mountain ranges carry four or five splendid seams of coal, ranging from three to seven feet in thickness, above water, all available for drift mining. Transportation facilities are provided by about 25 miles of the main line and spurs of the Tennessee Railway Co., which is stated to be in operation within the boundary of this property. For terms of sale and further particulars address Milton T. DeVault, receiver, Knoxville, Tenn.

Telephone Equipment for Churches.

A new type of telephone apparatus known as "Church Telephone Equipment," has made its appearance on the market. It will be most useful in churches, lecture halls and theaters where the acoustic properties are poor or where there are in the audience persons whose hearing is not normal. The equipment, which has been developed by the Western Electric Co., 463 West St., New York, consists of a special telephone transmitter for mounting on the pulpit or platform and of receivers to be used by those in the audience requiring them. The transmitter consists of three special microphone transmitter units in an ebony-finished case. The receiver is the ordinary watch-case type with a lorgnette handle provided with a special sliding extension to vary its length from four to seven inches. Each receiver is provided with a cord and plug. A jack which is connected to the line leading to the transmitter is placed in the pews. When the plug attached to the receiver is inserted in the jack the user is in a position to listen via telephone to everything that transpires on the pulpit or stage.

TRADE LITERATURE

Developing Avocado Pear Industry in Florida.

The Seminole Avocado Development Co. of Upcohall, Lee county, Fla., with New York offices 20 Broad St., has issued an interesting booklet entitled "The Aristocrat of Florida Projects." In this booklet is given a general description of the mild and equable climate of Florida as relating to the West Coast section of South Florida and the advantages of this section are pointed out to those interested in the growing of the avocado or alligator pear. Plans and method of operation of the Seminole Avocado Development Co. are also explained in the booklet.

Sullivan Drill Sharpener.

An essential feature of the Sullivan drill sharpener illustrated in bulletin No. 72, recently issued by the Sullivan Machinery Co. of Chicago, is that all processes of making the bits and shanks are performed by hammering. The Sullivan drill sharpener is a compressed-air machine for forging and sharpening rock drill and hammer drill bits and forming shanks. Methods of forging shanks and the proper manner of sharpening drill bits and other information dealing with the heat treatment required, together with a general description, illustrated by line drawings, of the Sullivan sharpener, are given in the bulletin.

Clark Platform Trucks.

Table, baggage and express platform trucks manufactured by the George P. Clark Co., Windsor Locks, Conn., are described and illustrated in its Bulletin "J." Among the different designs illustrated are printers', paper-makers' and lithographers' trucks, three and four-wheeled platform trucks, double platform or table trucks, shelf or assembling trucks, baggage barrows and express and baggage wagons, and special trucks for handling bar iron, sheet metal, etc. A separate folder accompanying the bulletin describes the type WN30 Clark three-wheel transfer truck, which has a capacity of 1000 pounds.

"Oswego" Internally-Fired Boilers.

A. D. Granger Company, 90 West St., New York, is distributing the sixth edition of bulletin No. 2, which it has just issued, to describe and illustrate the latest improved features now embodied in the Oswego self-

contained internally-fired water-tube boiler. Tables giving dimensions, ratings and other data for both high-pressure and low-pressure boilers are given in the bulletin, along with the outline of points of merit which claim the attention of the purchaser. The company states that the extended use of Oswego boilers for the past twenty years in office buildings, public schools, factories, etc., by the leading architects and consulting engineers throughout the United States is an evidence of their dependability and efficiency.

Betson's Plastic Fire Brick.

In a 20-page booklet entitled "Betson's Plastic Fire Brick for Making Right in Place, Jointless, One-Piece Boiler Furnace Linings," the Betson Plastic Fire Brick Co. of Rome, N. Y., tells how to construct a solid, gastight, one-piece boiler furnace lining, including front arch, side walls, combustion chamber, rear arch and bridge wall from the plastic refractory material which that company supplies. Without using special forms or tools, it is claimed a one-piece leakless back arch can be obtained, also door arches suitably shaped for the easy placing of coal on all parts of the grate. The booklet contains directions for testing boiler settings for air leaks and for the immediate repair, without shutdown, of cracks and holes to preserve the life of ordinary brick linings to the time when they can be replaced. Illustrations and diagrams show the one-piece lining as applied to the several types of boilers in general use. Copies of the booklet will be sent on request to those concerned with the management of boilers.

A New Book on Bristol, Va.-Tenn.

A series of comprehensive sketches of the representative business enterprises of the city of Bristol, Va.-Tenn., have been compiled and put in an attractive and well-illustrated book by I. J. Isaacs, under the auspices of the Bristol Board of Trade. As an introduction the first few pages are devoted to a discussion of Bristol's growing importance as a commercial and industrial center. It is claimed the location and region were destined, from the logic of the situation, to make Bristol not only an important trade and commercial center, but the gateway to vast resources in the mountains and valleys of the Southern Appalachians, as its many lines of railways offer abundant transportation facilities. Bristol has become a city of inviting proportions, with many substantial and costly structures in the business district, and with numerous handsome homes in several residence districts. With such buildings, representing an investment of many millions of dollars, have come the civic and public improvements incident to the best spirit of progress. These include miles of paved streets, many miles of concrete sidewalks, parks, an electric-car service and excellent lighting system, handsome churches, representing every denomination; substantial system of public schools and institutions for higher education. Views of the principal streets, churches, schools and other public buildings are given in the book.

Structural Beam Data.

Second edition of a pamphlet entitled "Structural Beams," covering a new line of sections supplementary to the American standard sections, has been issued by the Carnegie Steel Co. of Pittsburgh, Pa. In recent years, especially in the construction of modern office buildings and buildings intended for light machine-shop work, it has frequently been found desirable to use deeper beams than required for safe carrying capacity as determined by the floor loads required by the building laws of various cities, with a result that the full strength of a standard beam section is not always developed. To meet this condition designers endeavored to follow the outline of the American standard profiles, which, in turn, were based on the original German normal profiles, and in consequence light-weight sections have been made heretofore with the flanges of the same width and taper, but somewhat thinner, and also with thinner webs than the minimum weight American Standard sections. The beam sections illustrated in the pamphlet constitute, however, a radical departure from those profiles as regards width, slope and thickness of flanges. The carrying capacities of these sections are theoretically somewhat less than the carrying capacities of the corresponding minimum weight standard sections. Pound for pound, however, the metal is said to be equal, if not greater, in efficiency than the American standard, with the additional advantage that the new sections have somewhat greater stiffness, due to the greater width of their flanges.

boiler.
other
r-pro-
along
which
The
use of
years
torial,
ommal-
Statu
y and

etson's
ght in
urnace
ck Ca.
ruct a
urnace
e, com-
ge wall
which
ng spe-
te-plea
l, also
e easy
grate.
testing
the in-
cracks
rdinary
can be
s show
several
ples of
o these
boilers.

Tenn.

of the
of the
en com-
ell-illus-
the au-
As an
devoted
impor-
center.
on were
tion, to
at trade
eway to
valleys
s many
nsporta-
city of
ostantial
ess dis-
e home
th such
ment of
ome the
ident to
include
of con-
car serv-
andsome
ination;
s and in-
Views of
ools and
the book.

entitled
y line of
American
l by the
Pa. In
struction
dings in-
k, it has
to use
fe carry-
oor loads
t various
strength
ot always
designers
e of the
in turn.
n normal
eight sec-
with the
aper, but
a thinner
American
ions illus-
however,
orofiles as
kness of
of these
what less
the corre-
dard sec-
the metal
er, in off-
ard, with
e new sec-
fness, dis-
ges.